Suggestions for the TEACHING OF READING in India

BY

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INDIAN BRANCH

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PREFACE

ONLY the more elementary phases of the reading skill can be taught in the primary school. Those phases which begin to bear compound interest on the teaching and learning investment cannot be taught until more advanced maturity has set in. There are things to be done for the improvement of the reading skill that simply cannot be done before the secondary-school level. In the secondary school the teaching of reading has been practically shelved, except for text reading which hardly deals with the development of adequate silent-reading habits. Text reading gives an emphasis which is more apt to be injurious than helpful to the development of mature reading habits. The proof of the inadequacy of the present programme of teaching reading is the fact that secondary-school pupils do so little voluntary reading either during their schooldays or thereafter.

A few 'teachers' helps' for the improvement of teaching reading at the primary-school level have been published in India, but these are very scant and insufficient. At the secondary-school level there is nothing but a few fleeting references in some of the books on pedagogy or language teaching. The reason for the writing of this book thus becomes obvious—no one else has written it. The writer has been waiting for years for a reference book dealing with this subject and adapted to Indian school conditions which he could recommend to secondary-school teachers.

Foreign reference books on reading are legion. But they deal with a different attitude towards the subject than one generally finds in India. They are 'too high above the earth' for us at present, for they assume conceptions and practices to be general which the majority of teachers in India have

never had the opportunity to become acquainted with or to see carried out. A 'teacher's help' that has had its inception and growing pains in India is a necessity.

I had hoped that some teacher of long experience in the classroom would write this book. I am not a veteran of the classroom although I have been experimenting with the teaching of reading in a supervisory capacity for about ten years, have conducted a number of experiments in the teaching of reading, and have measured the reading skill of Hindi-speaking pupils extensively. As no teacher-author was forthcoming, however, I have undertaken the task. This material has had the benefit of suggestions arising from several long conferences with teachers.

The reader of this book is asked to forget entirely that it is written in English. It is definitely not meant for the teaching of reading *English* in Indian Schools, but for the reading of Indian languages. It should have been written in all the languages of India instead of in English, but at present that is out of the question. Pioneers in Indian languages will undoubtedly arrive on the scene later but in the meantime, we cannot wait.

Each teacher as he reads should, therefore, be thinking of how he will translate the suggestions given in this book into his own language or into the mother-tongue of his pupils. A foreign language can never be the natural 'recreational-reading' medium of any but exceptional people whose linguistic ability is far above the average and whose educational facilities have gone far beyond what we generally expect in the secondary school. There will never be much voluntary reading unless it is done in the mother-tongue. All suggestions given in this book are meant for use in the mother-tongue. It will take much ingenuity and hard work on the part of teachers to work out their programme for the improvement of reading habits in a language which differs so greatly from the one that this

book employs. But that is the problem before us, the adaptation to our own language of the rules of a scientific approach to the teaching of reading. A glorious opportunity for experimentation in our own language lies ahead. The approach will vary according to the language, but scientific approaches and psychological laws are both international and interlinguistic. They have something to contribute to the teaching of reading in every language. Each language has some peculiarities of its own which must be borne in mind when working out a method of teaching reading in that language.

This book does not pretend to introduce original matter. Some original experiments have been carried out in order to apply, under Indian conditions and in an Indian language, pedagogical principles in common use elsewhere, but otherwise the contents are generally accepted matter. This becomes quite apparent by the many quotations included in the following pages. The author has leaned heavily on the authorities not only because they have said better and more authoritatively what he means to point out but that it may be seen by any one who regards the educational psychology propounded in these pages as 'new', and therefore untried, that leaders in education have long been practising with evident success what the educational psychologists have been preaching.

In India also our educational theory has long admitted the need for a more scientific approach to the teaching of reading although classroom procedure has as yet made little effort to translate such an approach into practice. But, theoretically at least, the pedagogical principles stated in these pages have been widely accepted in this country also.

Much has been made in this book of the 'measurement of reading skills'. For this no apology is needed. One cannot intelligently try to improve unless one can tell accurately

what is already there, what is being accomplished, what is still lacking, and which practices and methods seem best to attain the desired end. A better method of measuring the reading skill is needed than is at the command of teachers in India today. Therefore considerable space is devoted to measurement, for it is more or less the core around which improvements have to be worked out. It is both the 'intelligence service' in the process of teaching reading and, in many cases, a good teaching approach; in other words it tells us what the situation is and may even help us to begin to improve it.

This book can perhaps be best used by employing it as a discussion outline in staff meetings. As the first chapter (and some of the succeeding ones) will show, the improvement of reading habits is not only the obligation of the teacher of the mother-tongue but of every teacher on the staff; for reading is essentially thinking under the provocation of writers on every subject under the sun.

I would like to take this opportunity of expressing grateful thanks to the Rev George P. Bryce and Dr Winifred Bryce for their help in preparing the manuscript, to the Rev J. C. Koenig for seeing the book through the press during my absence out of India, to Miss Emma Warner for suggestions used in Chapter IV. I am under a special obligation to Mr L. D'Sylva for his progressive outlook and boundless energy in introducing the Revised Syllabus for Primary Schools in the Central Provinces, which programme largely stimulated the experiments out of which this book was born. I remember with pleasure the fine comradeship which resulted from our co-operation. Among the many companions in experiment only a few can be mentioned, namely Mr J. C. Koenig, Mr Nilkhant Prasad Gupta, Mr B. Sadhu, and the staff of the Bhatapara Middle School.

E. W. M.

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A PRELIMINARY STATEMENT

'Over a period of several decades research has made impressive contributions to our understanding of the nature of reading and the basic processes involved. As a result of the rapid increase in the social significance of reading and of the new insights provided through early studies, research has extended rapidly until it now involves practically every important phase of reading. Each step of progress has been marked by the discovery of new problems and issues even more provocative than those previously attacked. Thus the scientific study of reading problems has not only increased understanding, but has also extended the frontiers and identified additional problems for investigation.

Furthermore, the results of research have modified to a notable degree the organization, content, and methods of teaching reading. As the place of reading in the curriculum has expanded, new problems requiring investigation have been identified. Thus research and classroom practice have been mutually stimulating, each profiting from the progress and contributions of the other. Only through continuous and whole-hearted co-operation on the part of all agencies interested in reading problems can we hope to attain an adequate solution of both the practical and the theoretical issues that we face today.'

W. S. GRAY

I

IS READING A SECONDARY-SCHOOL SUBJECT?

THE most useful skill or intellectual process the school can attempt to teach is reading. This may sound a sweeping statement but it is nevertheless true: nothing the school is responsible for contains the same power for further learning as reading.

Not much that the school teaches is of real value if there is no further learning after leaving school. Within two to ten years of leaving school much of the science, history, hygiene, civics, literature, geography, grammar, etc., has been forgotten by even the best students. If no fresh facts are added to the old during that time, only a lifeless skeleton remains. If fresh facts are added, life and interest remain. It is finding out new facts, seeing new relationships and fuller implications that keep a subject alive and growing in the mind.

There are three main sources through which new facts and relationships become known to us: (*i*) through direct observation; (*ii*) through conversation with others who know; (*iii*) through reading. Few of us are observant enough to grow greatly only through original observation. Few of us converse enough with stimulating and well-informed friends who can give us all that we require, neither should we be too dependent on others' viewpoints. We are, therefore, largely dependent on reading. Good reading habits which keep a student reading regularly for both pleasure and profit are therefore the most valuable single stimulant for growth that the school has to impart. (The radio is a recent and perhaps a fourth main source but

hardly to be compared with reading. People who depend almost entirely on the radio for their information are apt to be more intellectually spoon-fed than a well-read man.)

Much of what we learn today may be trivial by tomorrow. And even if it were not necessary to revise our opinions because of fresh facts coming to light, it would still be necessary to increase our knowledge in order to prevent ourselves from becoming intellectually static and stunted. The mark of education is the power the individual possesses of further intellectual growth. There is no such thing as an education acquired once and for all time.

The student who does not read regularly, out of intellectual curiosity, for recreation, or for practical utility, has been sent to school largely in vain; he lacks the most valuable tool for workmanship the school can give. His science, his history, his interest in politics, social problems, religion and literature, will grow antiquated and stunted because he lacks the stimulus of contact with well-informed minds. Further, he tends to lose his command of language and his intellectual activity lags behind.

While speaking of the kind of education needed in India Mahatma Gandhi has made the oft-quoted statement that 'Mere literacy is not enough'. He means that education must provide for training in citizenship and manual skills, for participation in the economic and social life of family, community, and country, as well as for the teaching of the three Rs. If we can give Gandhiji's statement a much narrower meaning than he intended by confining its implication entirely to the subject of reading we shall still find it true. *Mere literacy is not enough.* A literate is a person who has mastered the mechanics of reading sufficiently to spell out the meaning of a simple letter,[1] and that is not enough.

[1] The Census of India defines literacy as 'the ability to write a short letter to a friend and read the answer'.

'But the big problem of all literacy work is to teach people not merely *how* to read, but *to* read, *to want* to read, *to love* to read. After the mechanics of the skill have been mastered, after the ability has been secured, the *habit* has to be established. It is failure here that has been responsible for the deplorable lapse into illiteracy of an appalling percentage of children leaving the primary school. The *literate* must be made a *reader*.'[1]

Dr Krishnayya might have charged the middle school, and perhaps even the high school, as being responsible for relapses into illiteracy because of their failure to establish the reading habit. Probably few, if any, secondary-school pupils ever lapse completely into illiteracy; but judged by what they actually *do* read after leaving school we can safely say that they often lapse into a state of being non-readers, which is not a wonderful improvement over being illiterate.

There is no country in the world of which the same might not be said. The demand in America and England for newspapers and magazines that devote three times as much space to pictures as to letterpress is not altogether due to a great love for pictures. These papers owe much of their phenomenal circulation to the fact that there are many people, even among 'the better educated', who are too lazy to read or are too little skilled to be able to read without uncomfortable effort. They want their 'reading matter' to be predigested in pictorial form. But India has more than its fair share of those who *learnt* to read but *don't* read. The lack of literature is not to be blamed for this nearly as much as is commonly assumed; for literature becomes available when there is really a demand for it, no matter how great the poverty. A greater part of the blame must be laid on the school system of India which neglects

[1] G. S. Krishnayya, 'Making Readers of Literates' in *Indian Journal of Education*, June 1940. The italics are the author's.

almost entirely the teaching of reading beyond the elementary mechanical stages.[1]

Just how much reading is taught in the average secondary school in India? In the Central Provinces the typical middle school has the following weekly allocation in the mother-tongue:

Hindi textbook	5 hours
Library and newspaper reading	1 hour
Grammar and Composition ...	3 hours

In addition there will be some reading of the history, geography, and science texts. This often takes the form of an intensive study of these texts with the object of committing to memory the facts they contain in a semi-verbatim way.

The five hours devoted to the Hindi text need further comment. Most Hindi textbooks contain 150 to 200 pages. About 150 periods in the year are spent in the study of this text, so an average of one page a day is read. The reading itself can hardly take three minutes. The rest of the time is spent in comment on the text, analysis of grammatical forms, etc. A few schools make excellent use of the one library period and a very few schools take additional time for this kind of work. But far too many teachers find the library period an embarrassment. Probably the typical Hindi school of the Central Provinces is not very different from the typical school of other provinces. The number of pages read during a year by the average student in middle and high school, and even college, in and out of the class, would be highly shocking if compared to the amount read

[1] The inability of pupils to read with proper understanding would be much more conspicuous if the poorer students were not eliminated from school. After Class I nearly half the pupils who started school are eliminated. By the end of Class IV only 21 per cent of the original pupils remain. At the end of Class VIII only about 8 per cent remain. Thus those that remain in school up to Class VIII are a carefully selected group, selected largely, though by no means entirely, according to their ability to cope with the school programme.

by even eight-year-old pupils in schools where newer methods of reading have been stressed.

In contrast to the weekly allocation given above it is revealing to glance at the schedule for all schools of a certain State in the U. S. A. which is by no means considered exceptionally advanced. The schedule is for rural one-teacher schools of eight classes as well as for city schools. Let us take the programme for Class V. This class corresponds to the first class of a middle school in India. For economy of space the programme for only one quarter (or nine weeks) is given. Practically the same type of programme is required for each quarter.

FIRST QUARTER[1]

1. One-fourth of a basal reader for fifth grade.
2. Texts for all fifth-grade subjects.
3. Fifteen to twenty lessons using work-type material.
4. About ten lessons in oral reading.
5. Four poems for oral reading, appreciation, and of memorizing.
6. Any *three* of the following books should be read for recreation.
   (*a*) Pyle: *Merry Adventures of Robin Hood*
   (*b*) Ruskin: *King of the Golden River*
   (*c*) Mullock: *Little Lame Prince*
   (*d*) Cavanah: *The Treasure of Belden Place*
   (*e*) La Mere and Shinn: *Winnebago Stories*
   (*f*) Wicksteed: *Jerry and Grandpa*
   (*g*) Harper and Hamilton: *Treasure Trails, Heights and Highways*
   (*h*) Ford: *Red Man or White*
   (*i*) Orton: *The Treasure in the Little Trunk*
7. As much leisure reading as pupils can do. This should include newspapers, magazines, articles, books, stories and poems.
8. Check attainments for fifth grade.
9. Check status of pupils' rate and comprehension as shown by reading chart.

[1] *Courses of Study for Elementary Schools*, p. 422, State of Missouri, 1933.

10. Application of remedial measures.

The books to be read vary in size from 100 to 250 pages. The following list, of which four are to be read in nine weeks in Class VIII, gives an idea of the diversified type of reading required:

Stevenson: *Kidnapped*
Lamb: *Tales from Shakespeare*
Bok: *Dutch Boy Fifty Years After*
Whitcomb: *Young People's Story of Music*
Evans: *The Pathfinder*
Milton: *Child's Book of Stars*
Thomson: *The Land of Evangeline*
Ayscough: *Firecracker Land*
Edwards and Rattray: *Whale Off—The Story of American Shore Whaling*

Of course more time is spent on the teaching of reading in America than is the rule in Indian schools. The average time per class and the percentage of the total time devoted to reading in the schools of 49 cities with populations of over 100,000 is given in Table I.[1]

TABLE I

Class	Average number of minutes per class	Percentage of total time in Elementary School curriculum
I	84·2	32·6
II	80·8	28·6
III	66·4	22·2
IV	49·0	16·0
V	36·4	11·8
VI	28·2	9·2
VII	28·4	9·0
VIII	27·2	8·7

It is difficult to say how much time is devoted in Indian schools to actual reading activity apart from detailed com-

[1] Fowler D. Brooks: *The Applied Psychology of Reading*, p. 2.

ment and language drill based on study of the text (which, strictly speaking, is not reading). No one has investigated this. It would be very hard to get trustworthy information on the point; but undoubtedly less time is spent on reading here than is generally spent in America. In India, however, there is reading in English as well as in the mother-tongue.

It is not the amount of time spent in language work that is the most important factor but the way in which that time is spent. The greater part of the time allotted to the teaching of the mother-tongue in India is given to the study of the so-called 'text' of the prescribed reader. The writer has long felt an antipathy to this kind of intensive textual treatment. He is probably prejudiced, so he will refrain from making his own comments and turn to the authority of Michael West[1] who is by no means an unknown quantity in educational circles in India.

'Some few teachers get their pupils to express themselves decently in the vernacular, but very very few think of forming a taste in reading. Ordinarily one small textbook is prescribed, no more than an educated man could read from cover to cover in half a day; and this miserable little pill of language is chewed and masticated for a whole year.

Let this be clearly stated at the outset: that *there is no place for any set textbook in the teaching of the mother-tongue* (save, in the lower classes only, a book of really good selections for training in reading aloud). Of detailed textbook study, there should be *none*. Reading of prose is taught by supervised library work, or by drill in silent reading using a number of story books taken from the library. Appreciation of poetry is taught by reading aloud.

If the reading material used in the lessons is properly selected and is not too difficult for the class, there is no need for detailed microscopic study and a paraphernalia of notes. The book is in the children's own language, written by their own countryman for his own countrymen—for *themselves*:

[1] In his article on 'The Mother-tongue' on pp. 68–82 of the second edition of *Instruction in Indian Secondary Schools*, edited by E. A. Macnee.

he must be a poor writer if he cannot make himself understood without a paraphernalia of notes. Indeed such detailed 'chewing' of a literary text defeats the very object of the course. Our purpose is that the children should learn to love and appreciate the literature of their mother-tongue: but such methods teach them to loathe it.'

Ryburn[1] writes much more conservatively but also warns against the unnatural use of the text reader.

'We must remember that the reader is not the whole of the work that we are trying to do or even a large part of it. And although we may agree that we make the reader the centre of the work, there is a very wide circle round that centre. We cannot teach all the mother-tongue from any reader or from any text, nor can we ever allow our pupils to rest content with their readers. One of the things that all progressive teachers in India have to strive against is the tendency to look on the reader as providing the limit of what has to be done. This idea again is the result of the examination system. But examinations or no examinations, if we are really to enable our pupils to get what they should out of the teaching of the mother-tongue, we have to get rid of this textbook-limited horizon, and substitute for it the idea that the reader is but the stepping-off place to much larger and better things.'

Actually, the 'reader' is not thought of by the teacher as being practice in reading. It is considered the centre around which all sorts of language work is done. When, then, is the process of reading itself taught in the secondary school? A very common reaction to this question is: 'That is a primary-school subject.' It is not considered really necessary to spend much time on reading.

I have standardized several reading tests in Hindi and in doing this have probably examined more children and adults in silent reading than any one else in India. Full records have been kept. About 20,000 standardized or semi-standardized test results have been recorded, mostly from

[1] W. M. Ryburn, *Suggestions for the Teaching of the Mother-Tongue in India*, 2nd ed., p. 51.

primary and middle schools. From these statistics it is quite apparent that reading is neglected in the middle school to the very serious detriment of the students. Rarely in primary schools can a pupil read with enough ease to find it a pleasure even when the material is of the simplest. In middle schools, the standard of reading rises from class to class; but reading that is not compulsory is still a rarity. If we test pupils in the reading of material with a restricted vocabulary (2,000 different words), we find that 35 per cent of them cannot read twenty pages without feeling that they have done a day's work. Yet if a story-teller of ordinary ability should narrate this same material they would listen to him with delight. In reading simple narrative they often confuse detail and as often as not miss the real point of the story even though they can read it orally making but few mistakes.

A great deal is said about the desirability of teaching silent reading in order to stress understanding; but very little help has been given to teachers in India as they try to use free reading periods to initiate pupils in reading activity that is free from the irksomeness of having to be remembered for an examination. Even Macnee's excellent *Instruction in Indian Secondary Schools*—a 300-page symposium by the foremost educationists in India—devotes only about one-and-a-half pages to instruction in reading in the mother-tongue. This is considerably less space than the book devotes to paper- and clay-modelling and one-fifth the space devoted to either algebra or geometry. Nearly twice as much space is given to teaching reading in English as is given to teaching reading in the mother-tongue.[1]

[1] The *Handbook of Suggestions for Teaching* of the Board of Education, London, devotes about 18 out of 600 pages (3 per cent) to reading and the Missouri *Courses of Study* 60 pages out of 600 (10 per cent). The former gives 65 pages to mathematics and the latter 130.

As mentioned by Ryburn, the examination system has had much to do with the method of teaching language. It has had even more to do with the development of practices in the teaching of reading. In the C.P. middle school certificate examination (which was an external examination until recently) and in the High School examination (which is still an external examination) actual reading was never examined directly. Internal examinations are, as might be expected, more or less copies of the external examinations. They are modelled on them and form a rehearsal for them. There are questions on the 'reader', but in the case of such thoroughly masticated material the emphasis is little on the reading process itself, nor on the measurement of reading skill (which one can examine only if the material is new) but on the content of the passage which has been reviewed again and again and the explanations of which have been committed to memory. In the close adherence to the straight and narrow path of examination preparation, the actual reading process came to be looked upon as a wayside occupation for which there was little time or immediate practical need. Of course there was some testing of reading in the arithmetic, history, and geography papers, for the student has to read the questions before he attempts to answer them, but few teachers realize how often their pupils fail because they do not properly read the questions. Such failures appear under the heading of arithmetic, history, or geography, even though the pupil could have answered the questions had he been a better reader. The stereotyped nature of questions in examination papers also reduces the amount of really original reading that has to be done here, too. In justice it must be added that the situation resulting from the binding effect of examinations is rapidly improving, both on account of improvements in the examination system and because of the enlargement of

teaching objectives. Nevertheless, secondary schools have still by no means recovered from the effects of the neglect of emphasizing the development of those reading habits which make the pupil 'read, and want to read, and love to read'; and these effects have been accentuated by the examination system and by the rigid adherence to 'text reading'. A few schools and teachers have launched out into the fresh and invigorating breezes of recreational and curiosity-stimulating reading, but they are individual schools and individual teachers and do not represent the educational system as a whole.

The primary school has a slightly better record in this respect than the secondary school. It cannot be said that more than a few primary schools have made a real success of 'much free reading' outside the prescribed reader, but several province-wide syllabuses have incorporated the principle into their programme. Much remains to be done in carrying this into effect, even on a modest scale, but a radical departure from the old conception has been at least *announced* as desirable and to be expected. One of the earliest, if not the earliest, attempts in this direction is the Experimental Syllabus for Rural Primary Schools in the Central Provinces, commonly called the D'Sylva Syllabus after the leading spirit responsible for the revision.[1]

Reading Programme for Classes II and IV[2]

CLASS II

Six books from the list of books suitable for reading in Class II. One of these shall be taken from the list of readers prescribed by the Department. In silent reading a speed of 50 words a minute should be attained. 120 lines of poetry are to be read and understood.

[1] The authors of the syllabus were a committee under Dr V. S. Jha.

[2] From *Primary Education in the Central Provinces and Berar*, 1937, pp. 2 and 4.

CLASS IV

Eight books from the list of books suitable for reading in Class IV. One of these shall be taken from the list of readers prescribed by the Department. In silent reading a speed of 85 words a minute should be attained. 200 lines of poetry are to be read and understood.

The Madras Department of Education worked out a scheme in the same spirit.[1] The Basic Scheme of National Education is less definite in its provision for reading practice but is far in advance of old syllabuses. The emphasis here is on the nature of the content rather than on the teaching of the skill. The Basic Scheme laid down:

GRADE II: READING

Simple books which should contain lessons on the following:

(*a*) Life of nature.
(*b*) The child's social environment, his home, school and village.
(*c*) Health and hygiene.
(*d*) Local agencies of community welfare.
(*e*) Crafts.
(*f*) Festivals.
(*g*) Stories and legends.
(*h*) Life of children in other lands.

GRADE IV: READING

The reading material in Grade IV, in addition to the topics already outlined in Grade III, should contain the following:

(*a*) Stories of village crafts and craftsmen. Stories of important arts and crafts in different lands and ages, e.g. building, cloth-making, pottery, etc.
(*b*) Stories of great inventors and inventions.
(*c*) Stories of great discoverers and discoveries.

[1]The latest Madras *Syllabuses for Elementary Schools* says that the proportion of silent reading to oral reading should be 40–60 in Standard II and 60–40 in Standard III. It is not stated how much should be read.

(*d*) Life of people in certain typical regions of the world.

(*e*) Stories of some great benefactors and liberators of mankind, e.g. Zoroaster, Socrates, Garibaldi, Hussain, Lincoln, Pasteur, Davy, Franklin, Joan of Arc, Florence Nightingale, Tolstoy, Booker Washington, Sun Yat-sen, Gandhi (to be covered in Grades IV and V).

GRADE VI : GENERAL READING

Individual reading on general subjects under the guidance of the teacher, of simple books, pamphlets and articles dealing with topics outlined for Grades IV and V, together with the following :—

(*a*) Recent geographical expeditions, e.g. Everest, North Pole.

(*b*) Work of community welfare and community hygiene, including illustrations from other countries.

(*c*) Agriculture in India and in other lands. The life of the farmer in India and in other lands.

GRADE VI : STUDY OF LITERATURE

(*a*) A representative collection of selections from the literature in the mother-tongue.

(*b*) Selections from the masterpieces of various Indian literatures. (Literary translation in the child's own language.)[1]

The effectiveness of this programme depends entirely upon the seriousness with which the assignments are taken, and whether the material mentioned is extensive and suitable for considerable rapid reading or whether each heading will be a short little chapter that is hashed up and rehashed in a class *ad nauseam*.

The middle school syllabus in the C. P. gives but very scant attention to reading. The revised edition of 1935 says practically the same as the previous edition with the exception that the names of the textbooks for all classes in all languages are changed. It prescribes

1. The textbooks.
2. Occasional silent reading to be practised.

[1] From *Educational Reconstruction*, p. 139 (Vora, Bombay, 1938).

3. At least one extra book from the library to be read. (After Class V, 'magazine reading' is also mentioned.)

4. Manuscript reading, of papers written legibly. Thus there is a hint that silent reading is also in place and that there should be at least some reading besides the text-book, but on the whole those who prepared the syllabus seem rather hesitant to encourage it outright. If the Scheme of Basic National Education is extended upwards to include the middle department, the reading programme will become somewhat enlarged. We may be sure that both middle and high school courses, no matter what the scheme of education adopted in the province, are due for revision so far as the reading programme is concerned. The trend is towards modernization, and a more extensive reading programme is one of the very first steps in any modernized syllabus. The middle school syllabus referred to above has a decidedly antiquated appearance. Progressive schools all over India have long considered its minimum requirements as entirely inadequate; they have already voluntarily gone beyond its meagre and unimaginative demands. Any teacher who wishes to teach in order to make progress, and not merely to get his pupils through examinations by slavishly limiting himself to the minimum requirements, will seek to lead his pupils into adequate reading habits despite the failure of syllabuses to set forth an adequate programme to attain this. This book assumes a desire on the part of the teacher to improve the reading habits of his pupils regardless of the considerable extra labour it will entail on his part.

The present high school syllabuses add but little to those of the middle school.

The secondary-school teacher of the mother-tongue rightly complains that he does not have time to do much for the improvement of reading habits and to see that extensive reading is done. He has grammar, composition, literature, vocabulary studies, and oral work to take care of besides

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intensive study of the text and library work. Whether much of the time now spent on the text might not be far more profitably used on silent reading work, such as will be described in later pages of this book, and on more systematic language exercises, is a very pertinent question. Whatever its answer may be, the point arises whether the teacher of the mother-tongue is the only one responsible for the teaching of reading in the mother-tongue. Before dealing with this question the teacher of every subject should re-examine the long-range objectives of his own subject.

The teacher of history has not done his job if he is concerned mostly with dates and the names of personages, battles, military exploits and legal enactments. V. D. Ghate says:

'Here it is enough to state that history is a study of the present and not of the dead past. We are not interested in the past for its own sake. We have no time to tell grandma's tales of the past. We have no interest in facts or persons if they are isolated. An isolated and unrelated fact or person is not historical. In order that they should be historical, they must fit into the pageant of causal sequences in history.

It is, then, the unique privilege of history to explain the present, to analyse it and to trace its causes. We can learn to lead efficient and useful lives only if we try to understand our present-day problems—national as well as international—accurately and dispassionately. History will show us how to do it.[1]

How can this be done by confining oneself to 'lectures' and a prescribed textbook or two? It takes wide reading of history proper, of biography, the discussion of current problems, an acquaintance with newspapers, journals, and so on. It takes a specialized type of reading to be able

[1] V. D. Ghate, *Suggestions for the Teaching of History in India*, p. 16.

to understand the maps, charts, and statistics, without which history lacks its factual basis and is mere 'story-telling' with a quasi-historical flavour. Neither can the making of history, which is going on about us all the time at an unprecedented rate, be neglected. Pupils should get information which cannot be found in any school textbook. But obviously the history teacher cannot simply give a list of things his pupils should be reading to the language teacher and ask him to see that the pupils read this material in the reading class as soon as possible. Neither can it be left to home-work, unless the material is first discussed in class. If the pupil's reading of historical and biographical material is to be used to provide good history, the teacher of history must make himself responsible for seeing that this is done and done correctly. He must teach reading; reading of history, biography, civic organization and current economic, political and social events. While he teaches the reading of this he is also incidentally teaching history far more effectively than by lecturing and coaching. One of the most important tasks of the history teacher is to teach his pupils how to see the relationship of present, past, and future, of cause and effect, of environment and human behaviour, in everything that they see, hear and read. This sounds more like the aim to be placed before teachers in colleges and post-graduate schools; but the foundations of the teaching of real history must be laid from the time a student begins to think seriously, which is very early in the life of some children, especially when they have teachers who can lead them into it.

The teaching of geography has a very similar aim. Man's relation to his environment is the flesh and blood of the subject: names of rivers and mountains, lists of products and industries are its dry bones. Accounts of travel

and exploration do much to stimulate the imagination, helping us to put ourselves in the place of the inhabitants of different countries. This calls for an understanding of differences in the ways men live and earn their livelihood, as well as a wide background of geographical contrasts. Without this one can understand neither the problems of a people nor those arising out of climate, nature of the soil, geographical features of the country, and means of communication. It requires all the ingenuity of the teacher—and all the pictures and charts he can get hold of—to make them vivid. He can afford to enlist the help of Scott and Shackleton to describe the polar regions; of Livingstone and Mungo Park, to describe Africa; of Magellan, to help prove that the world is really round, by getting his pupils interested in reading about these intrepid travellers.

Science affects our lives at so many points that it is probably the most practical of all subjects to read about. There will be, and should be, less interest in pure science than in reading about the practical applications of science: about motor cars, radio, the by-products of coal-tar, electricity, agriculture, cattle-breeding, the basis of a happy marriage, control of disease, and so on. The main point of teaching science has been missed if we cannot share the excitement of Pasteur's great hunt for a prophylactic for hydrophobia, or of Galileo's thrill at seeing the four moons of Jupiter revolving round that planet thus proving that the planet's moving around the sun is a plausible theory. Science has done little for the student if it has not awakened an interest in the search for the truth and in the countless benefits to be derived from Nature by those who know how to use her products and forces. Science has its special vocabulary and reading scientific material calls for some familiarity with its ways of recording data. The person

to develop a taste for and the ability to read scientific material is therefore the science master and not the teacher of poetry and drill-master of grammatical rules. Science never 'stays put'; it is changing almost overnight. That means a devotee of science must read regularly to keep abreast of the times. Even children in the primary school can be as easily interested in science as in magic.

Physiology and hygiene are taught in order to encourage the intelligent care of our own bodies, and to create an interest in public health, sanitation, the care of children and in other problems which are always before us and require improvement.

No subject of the curriculum can be permitted to become static and stereotyped—which all subjects inevitably become if there is not continuous replenishment of data and circulation of ideas. This cannot be expected where free use of new material from many different sources is not a well-established habit. Progressive education is impossible if progress is not maintained in the post-schooldays. In short there are few things the school can do that are half as valuable or contain nearly the same potentialities for further growth when our schooldays are over as the inculcation of good reading habits. But these habits have to be cultivated in the various fields of interest separately, for each one has its own jargon, technicalities, and special points. Every teacher, therefore, is responsible for the development of good reading habits in his own subject, whether he be a teacher in primary or secondary school or in the university. The higher the education, the more indispensable adequate reading habits are.

II

THE MECHANICS OF READING

WHAT kind of activity takes place when we read? In other words, how do we read or what are we doing when we read? What is the physiology of reading?

Just because we happen to be good readers is no proof that we know what we do when we read. A good high-jumper does not necessarily know what his muscles are doing during a jump. Most jumpers are impatient when pressed to tell how they jump. They answer: 'I just make my legs go a certain way and I jump. Watch me jump. That's how I do it.' The things we do best are usually the things that have become so mechanical that we don't know how we do them. We don't have to think of how to do them, we need only will to do them. We do many things that we learnt in our infancy and never really gave much thought to, such as breathing, grasping, walking, talking, and so on. Which of us knows how we form the hundreds of different sounds we make during speech? Yet each of these sounds requires a slightly different muscular action about which we hardly know anything beyond the fact that we use the muscles of the throat in making them.

What do our eyes do during the reading process? Few people have even the remotest idea. It was only some 50 years ago that anybody took the trouble to try to find out, although men have been reading for millenniums. What the eye does during the reading process is so different from what the initiated expect, that few people believe it when told. Not until actual demonstration is made before them are they convinced.

So let us prepare for a demonstration. The reader of this

book is advised to enlist the help of a friend in order to see for himself how the eye acts during the reading process, for the improved methods of teaching reading are all based on the assumption that the eye does act as described in these pages. It is necessary to have seen the eye in action during reading in order to understand the force of the implications in the teaching of reading. A very thorough observation cannot be made without apparatus but the main physiological principles can easily be seen without it. The friend who co-operates in the experiment will be just as interested as you, even though he is not a teacher. You will want to watch the eye-movements of different people to see the difference in the way they read. Enlist the help of a fast reader to begin with. Ask him to hold a book or paper just a little above the level of his eyes. The observer should stand facing him and watch his eyes. It goes without saying that the light must be good so that his eyeballs and any movement of his eyes, however slight, can be clearly seen. He must really read and pay no attention to you. If he habitually reads silently let him read silently because he will read faster that way and the movements of the eye will be quicker and more precise. If he habitually reads aloud or mumbles while he reads let him continue thus, for this is not the time to teach silent reading. What do you see as he reads?

If you watch closely you will notice that his eyes do not move slowly and steadily across the page in one even movement but in a series of short little jerks. The eye cannot comfortably recognize letters while the eye or the head moves. Try to read while you are quickly moving your head from side to side. Impossible. Or swing around in a circle. The whole landscape is blurred before your eyes and you soon get dizzy. When looking out of the window of a moving train the distant landscape may not be blurred but

the nearby ground is. The camera has the same trouble: it cannot take a good picture while it is being moved or while the object photographed is moving. Some films are so sensitive and some camera shutters so fast that they can take a picture of a moving object because the exposure was of short duration.

Again and again I have tried to read while moving my eyes steadily at a uniform rate across the page. I sometimes think I am succeeding. Then I notice that my eye is playing a trick. As soon as I concentrate on the print enough to see it clearly, my eye moves off in its little jerks leaving it to my head to make the slow even motion that makes me think my eye is moving that way also. The eye recognizes ordinary-sized print (one can make out very coarse print even while the eye is moving) only when it stands still. It does not take much of a pause to make the recognition, one-tenth of a second is sufficient for some people, but the eye must come to a definite pause which can easily be seen while watching a reader's eyes.

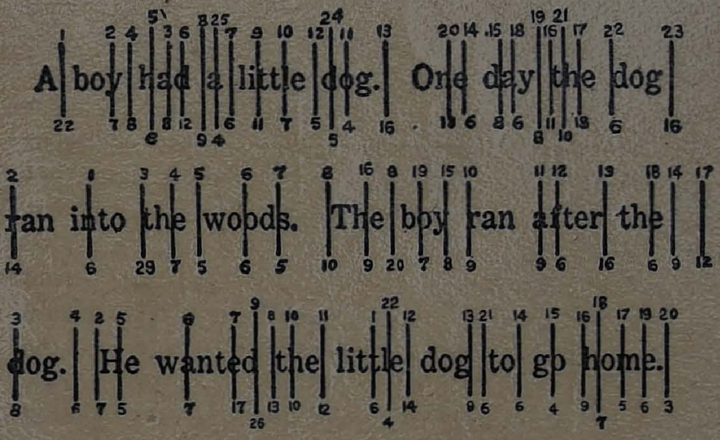
Now count the number of these pauses (or fixations, as they are usually called). See how many there are until the head and eye take that long sweep back to the beginning of the next line. Add one more to the number of fixations you observed because the first pause was overlooked when the long return sweep to the next line was made. If he was not a very good reader, or was nervous because you were watching him, or just happened to run across an unfamiliar word, you will probably see that once or twice for a short distance the eye did not go forward across the page from left to right (or right to left in the case of Urdu) but backwards. He had to go back to get something he missed. He will be surprised when you tell him this because it was all done so quickly he hardly realized it. But he will probably admit he did 'perhaps hesitate' over a word in the line.

By comparing the number of fixations per line and the number of letters in the line just read, one can get a fair indication of the number of letters a person reads at each fixation. This is called the eye-span, or the distance (span) on the printed page between the focal points of your vision during the pauses in movement of the eye across the page. This varies somewhat with the size of print because one sees more small letters in the same linear space than large letters. Using the same size of type, however, one finds that there is still a very great difference in the number of letters different people see at one fixation. It does not take long to see that there is also a great difference in the length of time different individuals pause at each fixation.[1]

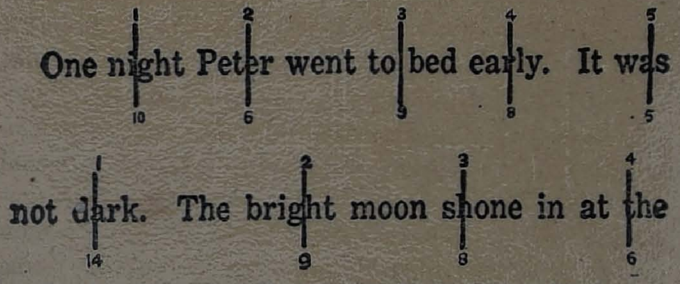
One should observe the eye-movements not of one person only but of a number, the more the better. One should pick out good readers and poor readers, and notice the difference between the two in eye-span, length of pauses, and number of regressions (going back to get a word that was missed). Some children just learning to read should also be observed. These are more difficult to observe but the difference between their performance and that of a good reader is most revealing. A good silent reader should be asked to read both silently and orally. Note the difference in eye-span and fixation-durations between these two different kinds of reading. You must examine a habitual silent reader, however, if you are to have a proper demonstration. Another experiment is to ask the same person to read English and then his own mother-tongue. Some interesting comparisons will no doubt come out of this.

[1] Another convenient method of observing eye-movements is to make the reader sit before a mirror. The observer can then see the eye-movements in the mirror. This method is less apt to make the reader self-conscious than when the observer looks straight into his eyes. A little experimentation is needed to find the proper angle for the mirror and best position for the observer. In both methods, the reader must hold the book or paper he is reading at least as high as the level of his eyes when looking straight ahead.

Photography makes very exact records of eye-movements which can then be examined carefully at leisure. Four such records are reproduced below.[1] The explanations under the figures are sufficient. It will be noted how differently an efficient and an inefficient eye works. The length



A. Eye-Movement Record of an Upper First-Grade Pupil



B. Eye-Movement Record of a Senior College Student

FIG. 1. SHOWING THE CONTRAST BETWEEN MATURE AND IMMATURE EYE-MOVEMENTS

of the eye-spans and the order of the pauses should be particularly noted. In Fig. 1(A), the record of a silent reader in

[1] Reproduced by permission from Clarence R. Stone's *Silent and Oral Reading* (Houghton Mifflin Co., Boston).

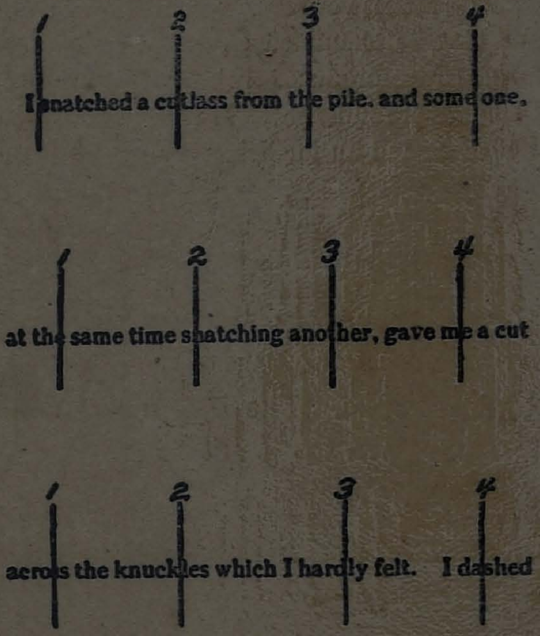


FIG. 2. SILENT READING BY A GOOD READER IN THE SEVENTH GRADE (JUDD)

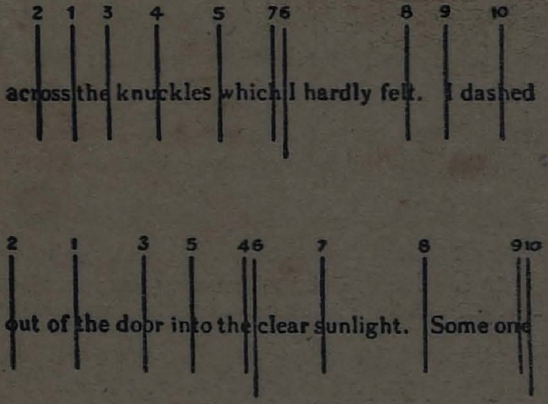


FIG. 3. SILENT READING BY A POOR READER IN THE THIRD AND FIFTH GRADE (JUDD)

Class I, the reader read as far as pause 3 but then suddenly came back to near pause 2 for pause 4. It is worth while unravelling the numbering on this record which shows the great confusion and scattering of attention of the poor reader. Of course, such difficulty with the mechanics of reading makes fluency and understanding impossible in

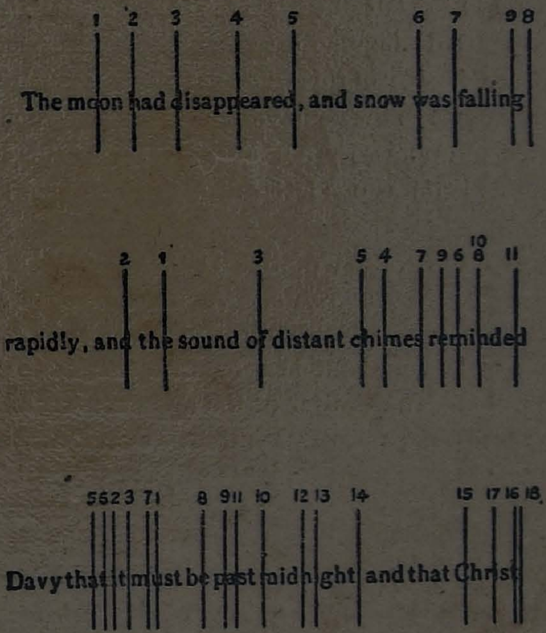


FIG. 4. SILENT READING BY A SLOW READER IN THE FOURTH GRADE WITH A POOR QUALITY RECORD (JUDD)

sentences of more than four or five words in length. This is to be expected of a reader in Class I though similar difficulties are found, to a less degree, in higher classes. The numbers at the bottom of the vertical lines give, in twenty-fifths of a second, the duration of the fixations; the numbers at the top are the fixation sequences.

The significant thing about these facts regarding the physiology of reading is that it explodes completely the old

theory that one reads by spelling out words, by seeing each letter in the word separately. One sees not one letter at a time but entire words and even phrases. The vertical lines in the records give the impression to some people that one sees half words at a time. But what the eye sees is not what is between the vertical lines but rather a little to the right and a little to the left of each line. The vertical line is the *centre of focus* during the pause and of course something is seen to each side of this centre of focus, usually about half the distance to the next vertical line. The good reader sees words and phrases as a unit. The poor reader concentrates on as little as one letter at a time although he sees more.

A further illustration of this is demonstrable through tachistoscope measurements. A tachistoscope is an apparatus for measuring speed of vision. It is composed of a camera box without lens or arrangement to accommodate a film. The shutter of the apparatus can be set for various speeds like a camera shutter. One looks into the apparatus and gets a hasty glance at letters or numbers or whatever is exhibited in the apparatus. At exposures as short as one-fiftieth of a second it is possible to recognize words nearly as easily as a single letter or number. One does not have to be long with a tachistoscope before realizing how infinitely slow a process reading would be if we actually did have to identify each letter of each word. We take in words and groups of words as speedily as single letters. Combinations of letters forming familiar words are easily remembered but combinations of letters which do not make words familiar to us are very hard to remember. Words are not combinations of letters but word-pictures seen as a whole and recognized as a whole. The word 'fish' can be recognized as quickly as the combination 'rq'.

The whole pedagogy of teaching reading changed when

these facts became known. Since the letter is not the unit of vision and is no easier to recognize than an entire word of several letters, the teaching of reading in its first lessons should deal with words instead of letters. The sentence method, the word method, the story method, the Beacon method, all are built up on this assumption and have proved themselves vastly superior to the strictly phonetic method. Deciphering a word according to its sound symbols is a very complicated process which children learn only very slowly. The newer methods aim at making a certain number of word-pictures familiar to the beginner. This is what is meant by a reading vocabulary of 300 words. This does not mean that the child knows 300 words for use in conversation. He probably uses far more than that. What it means is that he should be able to recognize instantaneously 300 selected words without having to stop to analyse their structure or even to remember of what letters they are composed. The appearance of a word is familiar to us in the same way that the faces of those we see about us constantly are familiar. We may not remember that a person has a long nose or a short one, blue eyes or brown, but we can identify that person without trouble.

Even where the strictly phonetic method or alphabet method is taught, children seldom decipher words phonetically in the first or even second year of their schooling. They memorize whole sentences and pages and have the greatest difficulty in recognizing words away from the pages on which they are used to seeing them, although on that page and in a certain position of the memorized sentence they do remember what word is there. Children taught by the phonetic method exclusively are often no better in phonics than those taught by the newer methods; in independent reading and in the development of economical reading habits they are far behind them.

Experiments in teaching adults to read show that adults can profit from the phonetic method much more than children because of their superior intelligence. They understand more quickly.

Moreover, by emphasizing the individual letter, faulty habits of reading are inculcated. For fluent reading one needs a long eye-span ; that is, one must see entire words and phrases at once. Close attention to letters not only discourages this but builds up wrong habits which make the development of proper eye habits difficult.

How much even those who think they read by noting each letter separately are still dependent upon word-pictures can be seen from the following experience with a dialect language. In the district where I live, the Chhattisgarhi dialect is spoken. Hindi is taught in schools, but outside school the local dialect is used in all conversation. Very little reading matter is printed in Chhattisgarhi and I have often given material written in Chhattisgarhi to literates in Hindi who a moment before were talking in Chhattisgarhi. Almost without exception they could only read the dialect with the greatest difficulty at barely one-tenth the speed at which they read Hindi although exactly the same letters are used. The words of Chhattisgarhi are more familiar to them than Hindi words but not the visual symbols of these words. Visual memory of entire words is used much oftener in reading than deciphering ability.

Most good readers pay little or no attention to spelling and small typographical errors as they read. The eye does not analyse very closely but sees as a whole. Only when the error is gross and destroys the word-picture do they notice it. Good reading habits do not make for good proof-reading. Proof-reading is a specialized and very detailed kind of reading which pays close attention to detail but

little to meaning. When reading proofs I find I usually pay no attention to the actual content of what I am reading but only to detail, and this seriously distracts my mind from the sense. Close attention to each letter is usually a distraction, not a help, to understanding, whether the reader be reading for work or pleasure. Some people are more analytically inclined than others but most of us read better by not scrutinizing the print closely. Context is more helpful than attention to letter detail. The claim that one needs to be able to spell correctly in order to read well is fallacious. We can read the same word a thousand times in a day and yet forget how to spell it. It is only when we write that accurate spelling is called for. In reading, the eye moves too rapidly for such detail.

When we need to decipher a word, it means a break in our reading rhythm. Usually it means a regression, at least a hesitation. Reading rhythm is important because understanding is greatly dependent upon it. A similar principle holds true in listening to people speak. An even flowing modulated voice speaking at a normal rate is easy to understand. But a person slowing down his speech to one word per second and speaking in a monotonous voice without proper regard to phrasing is exceedingly hard to understand. A person speaking at twice the normal rate is almost understood better than one speaking at half the normal rate. While reading, the rate of reading also influences understanding. Pauses to decipher unfamiliar words upset fluency and hinder understanding.

Reading, in this respect, is something like bicycle-riding: momentum and ease of performance add greatly to efficiency. (We assume efficiency in the case of reading to be efficiency in understanding.) It used to be thought that slowness in reading added to thoroughness. Judging from the facts of the case, it might as justifiably be contended that

slow bicycle-riding is more thorough. In an experiment Judd found that 86 per cent of the fast readers were of good or medium efficiency in ability to understand, 75 per cent of the medium fast readers were either good or medium in quality, while only 64 per cent of the slow readers were at least medium good readers. 14 per cent of the fast readers turned out to be poor in comprehension—almost exactly the same percentage as showed good quality among the slow readers.[1]

The newer methods of teaching reading all emphasize the advisability of putting in front of beginners material such as they can quickly begin to read fluently and understandingly. They should develop mature reading habits on easy reading material as soon as possible. The theory behind some of the reading textbooks in India is the very opposite; that is, they specifically aim at making the reading material difficult. It is no uncommon sight to find that 25 per cent of the words in the official text are unknown to pupils. This does not lead children to the conclusion that books and papers are interesting and that reading is a ready means of finding out profitable information. It rather fosters the impression that several laborious perusals are required to decipher what is on the page and that a teacher is necessary in the process.

An essential part of the ability to read is acquaintance with at least 90 per cent of the words therein. Reading ability is highly correlated to the size of the reader's vocabulary. This is to be expected, as understanding in reading is directly dependent on knowledge of words. How is a good vocabulary built up? In India the common method is to have a passage read orally and then to single out the less known words for definition and use in oral language work. The method has its value, but in very many cases

[1] Quoted in Stone, op. cit., p. 17.

degenerates into a vocabulary drill for the purpose of passing an examination.

The mental cataloguing of words in dictionary style is neither the most natural nor the best way of building up a good working vocabulary. Words have many different shades of meaning which become apparent only through the contexts in which they are used. A more natural setting for the use of words in their context is needed than the 'schoolroomish' procedure which says 'Now try to use this word in a sentence'. Such sentences are usually artificial, not sentences of actual use. The working vocabulary grows naturally by itself during the course of extensive reading on different subjects. Vocabulary exercises can be of immense help,[1] but vocabulary-building gets its greatest impetus from the actual natural use of language, both when listening or when reading (for a listener also uses language if he really understands what is being said), and from creative speaking or writing. The drawbacks of this method of accumulating a vocabulary are that the same words may not be repeated often enough to leave a lasting impression of their meaning and they may not be used in a large enough variety of meanings to call forth sufficient associations. For these reasons, and in order to fix the word-picture itself, considerable care is taken, when preparing proper literature for beginners, to see that each word introduced is used a number of times. In a new-method primer or reader every word is usually repeated at least ten times. This is in marked contrast to what has been found in an analysis of some official primers in India where 58 per cent of the words were used only once, i.e. not often enough to permit either an adequate word-picture to be formed or for the pupil to discover its meaning or meanings in context.[2]

[1] See Chapter XV.

[2] J. C. Koenig, *Teachers' and Authors' List of 4,000 Important Hindi Words*, p.v of Introduction (Mission Press, Jubbulpore,1933).

Careful studies have been made to ascertain what proportion of new words a reader can face without the new words proving such an impediment to reading fluency that understanding is seriously interfered with ; in practice this means the proportion of new words whose meaning cannot be guessed from the context. Few people read with a dictionary at their side. Admirable as the habitual use of the dictionary may be, it must be admitted that it is a real deterrent to reading because if what one reads is interesting, one does not want to stop to look up words. It has been found that one new word in thirty running words permits smooth unhindered reading which can be well understood without resort to a dictionary.[1] The problem of making a scientifically constructed reader is in large part that of introducing new words regularly and systematically so that there shall be satisfactory growth in the number of words readily recognized by the eye whose meaning is known.

Few reading books, even in America or England, measure up to the ideal of only one new word in 30. Most of them have a vocabulary-burden of about 18.[2] Some years ago, when the Koenig word-count was being made, one of the primers was found to have a vocabulary-burden of 2·3, a first reader 4·6, and a second reader 6·8. Under such conditions the teacher could not do other than make the pupils memorize the passages instead of getting them to read them.

The way to decrease the vocabulary-burden is to increase the number of used words without increasing the number of

[1] The number of new words a reader can deduce the meaning of from the context depends largely on intelligence and maturity. An intelligent adult can read matter with one new word in 15 without inconvenience.

[2] By 'vocabulary-burden' is meant the proportion of new words to the total number of running words. For example, if a primer contains 1,000 running words and there are 120 different words used, the vocabulary burden is said to be 8·3. This means that on the average nearly every eighth word in the text is a 'new' word.

new words. Thus a short book will be more likely to have an excessively high vocabulary-burden than a long book. A book introducing many unfamiliar words must be long enough to give adequate practice in the use of those words (but the new words must not appear so often that several unfamiliar ones in close proximity impede the reader's efforts to understand). Not long ago I asked some middle-school pupils to underline every word in a certain lesson whose meaning they were in doubt about. Many of the boys underlined 25 words on each page. Reading these pages was almost like reading a foreign language. The present reading material in both primary and secondary schools in India does not contain nearly enough reading matter. It is not by the intensive study of difficult reading matter that fluent readers, who *read* and *love to read* are made, but by giving them an abundance of easy material that they can master easily enough to feel that they are getting profit and pleasure out of it. Ability to read what is 'difficult' comes with sufficient practice in reading easier material provided that the more difficult material is introduced systematically, as the reader's maturity, vocabulary, familiarity with subject-matter of this type and mechanical skill increase. Some teachers feel it is a disgrace to introduce into class reading matter of less difficulty than the official text. Reading is no end in itself but only a means to get at content, as walking is a means of getting somewhere and not primarily a means of exercise.

Instead of spending 150 periods in the year reading 150 pages of text with 1,500 words in it, that time can more profitably be spent reading 3,000 pages with the same number of new words which, we may be sure, will enrich the reader's vocabulary and language-mastery, although he may not do so well in the examination on the text itself.

However, besides having advanced himself just as much in language (if not more), the pupil will have improved both his reading skill and habits; he will have gleaned a lot of interesting information of all sorts and enjoyed some good wholesome stories.

The purpose of improved reading methods is to help pupils to acquire skill and a taste for extensive reading. To accomplish this one must pay attention to the physiology of reading throughout the school career from almost the first day. When a pupil finds that he can actually read what he really wants to read, motivation provides momentum. For children are sensitive to the joys and chagrins of success and failure. When they find themselves able to read attractive-looking pages or even books all by themselves, they feel a sense of achievement which can never come from merely repeating after the teacher sentence after sentence until they have almost memorized the page. This sense of achievement is possible early in the school life of the child if the reading material is written in a carefully controlled vocabulary with which they have been made familiar.

The best results cannot be obtained through oral reading methods. Oral reading provides the wrong setting for the teaching of reading for pleasure and profit. In the first place it deters the reader for he does not want to be conspicuous. Secondly, other people seldom want to hear it, whether the reading is understandable or a mere mumble. Finally, oral reading is far less efficient than silent reading for private use. This, again, is a plain matter of physiology and figures.

No one can read orally at more than about 160 words per minute without his speech degenerating into an unintelligible mumble. This speed is attained by the average child using silent reading methods by the time he is in Class VI. By the time a child is in Class VIII he ought to be reading

silently, with understanding, 240 to 350 words a minute. The muscles of the throat cannot move as fast as that. It is like a motor car being hampered by travelling in company with a bullock cart. In the effort to talk fast the eye-movements also become confused. It is very tiring to talk while reading. It would be an exhausting day on which we read orally for 6 hours. But silent readers often do so; not, certainly, without fatigue, for the mere feat of sitting so long is tiring, but with far less weariness and dryness of the throat than come from oral reading. We may safely assume that a habitual oral reader will not be an extensive reader, nor a fast one, nor an efficient one from the standpoint of his understanding what he reads. The attention paid to uttering the sounds and listening to them is a distinct deterrent to understanding. The slow speed is also conducive to a flagging of interest.

Vocalization need not be understandable to be a deterrent. A mere mumble, during which the throat still acts as a brake on the swift eye and alert mind which want to advance faster than the voice can follow—even that unconscious and inaudible buzzing called 'inner speech', which some people indulge in without realizing it—is an impediment to speed and understanding. The next chapter deals with methods of overcoming vocalization; in this chapter a mere allusion to the inter-relationship of the eye and throat muscles has been sufficient.

The mechanics of reading are very complicated. Only a few of the more important matters have been mentioned. The habits to be established in the earlier and intermediate stages, which concern the secondary school, are given by Davidson[1] as follows:

[1] C. J. Anderson and I. Davidson, *Reading Objectives*, pp. 21–3.

A. In the Earlier Stages

1. Ability to pronounce words.
2. Ability to recognize the meanings of words.
3. Ability to interpret sentences or paragraphs.
4. The habit of reading for some definite purpose, as gaining desired information or in answer to a question.
5. The habit of asking questions as one reads.
6. The habit of rhythmic eye-sweeps across the page.
7. Ability to follow simple printed or written directions for making some toy, playing some game, or performing an experiment.
8. Ability to read and get facts accurately.
9. Ability to use ideas gained from reading in other situations.
10. Ability to read silently and express the thought in words and action or other form of expressive activity.
11. Ability to read simple material orally with expression, using good voice tones, clear enunciation, and correct pronunciation.
12. Ability to read rapidly, easily, and fluently, and to get the thought with accuracy and reasonable rapidity.

B. In the Intermediate Stages

1. Ability to master the pronunciation and meaning of new words by the methods indicated for the primary grades, through the context and from the dictionary.
2. Ability to scan or skim informational reading material at a rapid rate and to select essential data.
3. Ability to phrase and to read in thought units.
4. Ability to follow written or printed directions with accuracy and reasonable speed.
5. Ability to find answers to specific questions.
6. Ability to comprehend fully and interpret selections suitable at this stage and to utilize the data secured in drawing valid conclusions.
7. Ability to discover problems through reading.
8. Ability to select the main thought of a paragraph.
9. Ability to make an outline of selected passages.
10. Ability to select and evaluate simple data for problems, picking out the essential points of a selection and

arranging the supporting details in the order of their importance.

11. Ability to recall pertinent facts, key words, quotations, descriptions, data, etc. after a re-reading.

12. A genuine love and desire for worth-while reading material of a varied character.

13. Appreciation of humour, word pictures, character sketches, dramatic situations, etc.

III

IMPROVING THE TEACHER'S OWN READING HABITS

HUNDREDS of careful experiments have been conducted by experts on the reading process and on methods of teaching reading. On going through them one notes with interest how many of the experts mention having greatly improved both the speed and comprehension of their own reading. Experts in the field, they were still able to improve themselves by making a conscious effort. The average college student or adult can improve himself very noticeably by a little daily attention for two or three weeks. A few years ago I was in a class of graduate-students whose average age was about 30. We decided to experiment on ourselves to see to what extent we could improve the speed of our reading, taking care not to favour speed at the expense of understanding. There were twenty-four of us in the class. At the end of two weeks we reported increases in speed, i.e. number of words read per minute, of from 20 to 100 per cent. This was achieved at the cost of almost no extra time by simply giving attention to the question of speed as we went about our ordinary reading work. Other experiments on self-improvement were conducted but none quite as conspicuous in its success as this.

It is no reproach to any adult to suggest that he can improve his own reading. Nearly everyone needs some improvement and many need a great deal. No teacher will have learnt much from this book unless he has tried some experiment for his own improvement as well as for that of his pupils.

Probably the greatest improvement can be made by those

who are not yet bona-fide silent readers. A fair percentage of teachers in India move their eyes while reading only at a speed which corresponds to the movement of their throat muscles. Oriental tradition has been very friendly towards reading aloud and there are many teachers of the highest standing, to whom, until 20 years ago, it possibly never occurred that this is not the normal method. The oral reader has the greatest possibility of improvement, but he has also by far the hardest job; for the habit is of such long standing that it cannot be uprooted without persistent effort. Very little other improvement can be hoped for until the foundation of more efficient reading is laid on the basis of silent reading.

Vocalization while reading is such an ingrained habit with some people that they do not realize they are doing it. They may make quite a noise without hearing it themselves; or they may have suppressed the noise so that others cannot hear it while still retaining movement of the throat muscles or lips. Every reader of this book is advised to pay careful attention to himself to see if there is any kind of lip or throat movement while he reads. Any such movement must, for practical purposes, be considered the same as vocalization.

With most children, a mere reminder is usually enough to cause them to read silently; but not with all. Some experts advise teachers not to begin suppressing lip movements too early; children should not be made over-anxious about it. But if they persist in it up to Class IV they should then be taken in hand with individual exercises.

The attempt to suppress vocalization on the part of adults may at first result in a loss of efficiency. For a while the reader will probably read with less understanding. This loss is merely temporary, due to the breaking up of long-established habits. With daily practice the new way establishes itself gradually. It is best not to overdo the

practice at first, perhaps not for more than five minutes at a time. The reader must experiment with himself to find out how long he can suppress it without undue strain. Daily practice, for increasing periods of time, is more effective than intensive work for a few days followed by a relapse. The more firmly established the habit of vocalization, the easier it is to revert.

When first trying to eliminate vocalization, very easy reading material should be used, preferably something with which the reader is already somewhat familiar. The strain on understanding imposed by the abrupt stifling of an old habit is then reduced. Children should be warned to resist all temptation to use lips or throat; then cards with short sentences are held up for a fraction of a second and the children asked to state what was printed on them. This method is probably superfluous when dealing with adults.

The second stage of correction exercises for vocalization is to lay emphasis on the thought of what is read rather than on the mechanics of reading. Concentrate on extracting the main idea from the reading material regardless of how many words are seen clearly or how complete and grammatical the sentence looks, etc. Gradually these gaps will disappear. Trying to remember the details of the sentence causes concentration on the mechanics of reading and brings back into action the old eye-throat combination.

The third stage is to try to increase speed, even though this means much skipping and skimming. The purpose of this is to break up the old connexion by making the eye run so far ahead of the vocalization processes that these processes get disgusted and give up the race. In all three exercises the reader must try not to pronounce any word to himself except for purposes of testing himself after closing the book.

It may be a matter of some weeks before the change to

silent reading can be made and even then vigilance will be required to keep the old habit in abeyance.

There is one kind of vocalization that should not be suppressed, namely when reading inspirational literature where we want its beauty and power to make the fullest impression upon us. Reading aloud to oneself to heighten appreciation is quite a legitimate function of oral or even semi-oral reading but is out of place in work-type reading.

How can a teacher increase his speed of reading? A hint of the answer has already been given in the suggestions for suppressing vocalization. It is simply a matter of making a conscious effort to read faster while taking care that the reading does not degenerate too much in respect of what is understood. In this way a higher normal rate, just as comfortable and efficient as the slower, becomes a habit.

Which *part* of the reading process is to be speeded up? To give the correct answer we must remember the physiology of reading which can be summarized thus:

'The eye moves in a series of jerks. The eye does its seeing when at rest in the fixation-periods between the jerks. The distance between the fixation-points is, up to a certain limit, a matter of training.'

The time it takes the eye to move from one fixation-point to the next is so small that there is nothing much to be gained in speeding this up. That is practically beyond our power. The eye takes *practically* the same time to move to a distant fixation-point as to a near one. The time is consumed while making the pauses at the fixation-points. Therefore there are two ways in which to increase the speed of reading, both of which must be utilized:

1. By reducing the time of these pauses.
2. By increasing the eye-span, or distance between the fixation-points.

The first is easier than the second and can be achieved by driving oneself to read as fast as is practicable. This also

aids in accomplishing the second, but here additional exercises may be necessary. Children are helped by rapid flash-card drill, that is, by exposing for a split-second short legends on cards for them to read. An adult can accomplish the same by taking quick looks at lists or short sentences. When speeding up reading one automatically takes longer jumps with the eye in the same way that a person automatically takes longer steps when running. After a little practice one can actually notice the number of fixations per line in one's own reading although they are usually not noticed because of the great speed of fast reading and because of its mechanical nature.

O'Brien,[1] one of the pioneers in the scientific investigation of reading, lists eleven factors which have been helpful in the development of speed.

1. Practice in rapid silent reading.
2. The decrease of vocalization in silent reading.
3. Training in perception by means of short exposure exercises, combined with practice in rapid reading.
4. Familiarity with subject-matter.
5. Habits of regular, uniform rhythmical eye-movements.
6. Purpose for which the subject-matter is read.
7. Concentration of attention.
8. Ability to grasp the meaning of contents.
9. Recognition of the value of the habit of rapid silent reading combined with the determination to acquire this habit.
10. The pressure of a time control.
11. Individual graph and class chart.

O'Brien's conclusions as to the possibilities of training in speed and its effect upon comprehension are as follows:

The present average rates in silent reading in Grades III to VIII are needlessly slow and inefficient.

These rates can be greatly increased by systematic train-

[1] John A. O'Brien in 'The Development of Speed in Silent Reading' in the *Twentieth Yearbook of the National Society for the Study of Education*, Part II, 1921.

ing over a period of two months.

The improvement effected in the first month is considerably greater than in the second month of training.

Marked increase in speed of reading may be effected without any impairment of comprehension.

The setting up of habits of rapid reading does not *per se* increase the accuracy of comprehension.

To secure marked improvement in accuracy of comprehension, special stress must be placed upon training designed specifically to secure that effect.

Marked improvement in comprehension, as measured by the number of questions correctly answered, resulted from training in rapid silent reading.

The marked gain in the number of questions correctly answered demonstrates the persistence of the improvement in reading rate in a changed situation involving a different mental attitude; i.e. in careful reading, and in reading to answer written questions.

It has been found that children pay much more attention to comprehension when training for speed if they are told that they will be tested for comprehension later. The adult will do well to provide himself with safeguards against deterioration in comprehension while he is increasing his speed. Exercises are given in later chapters to indicate the kind of checking of comprehension that should be done in the secondary school but in his own case the teacher will simply have to judge himself.

What standards can we expect in reading rate? Of course the rate varies greatly with the difficulty and nature of the reading matter. Some types of material can be read at one's best speed without much loss while others must be gone through very carefully. Much depends upon one's own stage of advancement for that type of material. A historian should be able to read history as fast as a novel but may be very much slower when reading about music. Material in which the subject-matter is rather familiar (this does not mean that one has to have read it before but merely

that the subject-matter is familiar) can be read rapidly; while new information, new points of view, and unfamiliar words cause a slowing up. Much also depends upon whether one reads for detail, for the central thought or is 'skimming'.

The average number of words read per minute by the pupils of various grades or classes in America is given by three well-known investigators as follows:

TABLE II[1]

STANDARDS IN RATE OF SILENT READING

GRADES	II	III	IV	V	VI	VII	VIII
STARCH	108	126	144	168	192	216	240
GRAY	90	138	180	204	216	228	240
COURTIS	84	113	145	168	191	...	...

It must be remembered that this result was found in the rank and file of schools where there had not been any previous special attention to speed except as it occurred in the

TABLE III

IMPROVEMENT IN SILENT READING AFTER FOUR WEEKS OF SPECIAL TRAINING

GRADES	BEFORE TRAINING		AFTER TRAINING	
	Rate	Questions correct	Rate	Questions correct
IV	117·8	17·1	152·3	19·8
V	144·6	23·6	182·6	33·8
VI	178·8	34·6	212·6	39·8
VII	183·4	33·4	244·0	46·5
VIII	228·2	44·3	265·8	58·5
IX	235·6	41·6	376·1	49·2

[1] Taken from the Class Record Sheet for the *Courtis Silent-Reading Test.*

regular routine. The effect of four weeks training with speed exercises is shown (Table III) by an experiment by F. D. Brooks which is not dissimilar to the results found by several other investigators.

From this it can be seen that the normal silent reading rate of pupils who have not received special drill work is not much faster than that of the normal oral reading rate (about 160) above Class VII but that special attention nearly doubled this in the case of pupils in Class VIII. It is in the later part of the middle school and during the high school course that the greatest gains can be expected; and also, no doubt, in adulthood. Before Class VII, oral reading rates and silent reading rates do not show such great differences. It should be noted in Table III that comprehension (as shown by the number of questions on the text answered correctly) actually improved in spite of the greater speed.

What speed can an adult expect to attain? A medium good reader should be able to reach 300 to 400 words per minute without difficulty provided he is familiar with the type of material. For example, this should be attained easily in newspaper reading in English by one whose mother-tongue is English. What speed can be expected in Indian languages is not known: strange to say, none of our training schools in India has given us the benefit of experiments along this line. This would be a fairly fruitful field of experiment for we know nothing of the relative difficulty of reading different scripts.

It is said that Thorndike, the great educational psychologist, read his professional literature with such speed that people had an idea he was merely glancing through a book. In half an hour he had a very good idea of what a book was about and could give an informed criticism of it. Of course he did not read the entire book but he skimmed

through it thoroughly enough to know more about it than many who had spent hours on it. Absolute mastery of the subject-matter is necessary to be able to grasp the trend of a book from a few glances at each page. But this is hardly a feat we need try to emulate. It is cited here simply to indicate what is humanly possible. For most of us 350 words per minute is probably quite good.

Further suggestions as to how teachers can improve their reading habits will suggest themselves in succeeding chapters which are concerned primarily with improving the habits of children.

There is of course some reading that we do not want to do speedily. We like to linger and meditate over it. When it comes to recreational reading, since we do it for pleasure, we have a right to do it at whatever rate we please, although once the mechanics of reading are sufficiently mastered to make fast reading possible we automatically 'please' to read faster than those who have not acquired the necessary skill. Preference for the slow reading of material like novels and newspapers is usually the 'excuse' of the not too skilled. In work-type reading, however, we do want speed. No teacher of history or geography or science or civics or literature can be a master of his subject who does not read extensively and know the literature of his field.

IV

HOW READING IS TAUGHT TO BEGINNERS

A SECONDARY-SCHOOL teacher who does not know the more recent methods of teaching arithmetic and reading in the primary school is under a very serious handicap. He cannot proceed with later steps in these subjects intelligently unless he knows how the foundations are being laid in the primary school and has a clear idea of how they ought to be laid. He need not be an adept at teaching small children himself nor need he be acquainted with the procedure from A to Z, but he must have an idea of the underlying philosophy and the methods that are being used to put it into practice. A secondary-school teacher should at least be 'well read' on the subject of primary-school methods and should frequently take time to observe teaching in primary schools—whether good or bad. From the good teaching he will get ideas of how to continue the good work; from bad teaching he will better understand the weaknesses of his pupils and the type of remedial work they need. At present teachers in bilingual schools co-operate and associate very little with teachers in primary schools. The teachers of the two types of school might be said to belong to two entirely different social and intellectual classes and this is very detrimental to the progress of both middle school and primary school. A middle-school teacher who does not take an interest in the improvement of methods in the primary school cannot properly understand problems of improved teaching in the middle school.

The methods of teaching reading are many. Most of them can be grouped as being predominated by one of the six

psychological approaches listed in the following pages. Practically all methods use a combination of several of the six. A teacher probably never adheres to one of these approaches exclusively.

1. *The phonic and phonetic approaches.* These are treated together because they are both 'sound' methods. Phonics deals with the sounds which single letters symbolize and phonetics deals with the complete sound. Usually both are used together. It might be said that phonics deals with letters and phonetics deals with syllables.

The phonical method of teaching reading is essentially a spelling method with the spelling done through letter *sounds* rather than letter *names.* Indian languages have a tremendous advantage over English in this respect because their spelling is strictly phonical. In English the exceptions to the rules of spelling and pronunciation are so numerous as to make the rules more or less undependable. But even with the perfect consistency of spelling in the Indian languages, learning to read exclusively by the 'sound' methods is too complicated a task for small children or even illiterate adults to learn. These 'sound' methods are ideal for giving the power to attack occasional unfamiliar words but not for fluent reading until the great majority of the words are recognized instantaneously by sight. For this reason either the imitative or word-recognition methods, to be described later, are used in combination with it.

2. *The imitative-method approach.* This is essentially a method of memorization through repetition. It is practised extensively in India in its most primitive form. The teacher reads a few words and the pupils repeat them after him parrot-fashion. Little effort is made by teacher or pupil to grasp the meaning. In time, entire pages can be repeated; but the word recognized when it is part of a particular sentence on a certain page is not necessarily recog-

nized in isolation or in a different sentence. A great deal of this kind of reading is necessary before any independence in reading can be expected. What reading is learnt comes in spite of the method rather than because of it. The emphasis is away from thought-getting towards a purely mechanical recognition of certain set passages. Many pupils who can repeat whole readers never learn to read even the easiest new material.

3. *The alphabet-method approach.* This is probably the oldest approach in the world. It was used by the ancient Phoenicians, Greeks and Romans and is still in almost universal use in primary schools in India. It has been displaced by more effective methods in Europe and America.

The feature of this method is that the letters are taught in their alphabetical sequence, often with but a very inefficient attempt to teach the phonical value of each letter. Months, sometimes a whole year, are used in teaching the alphabet in the proper order as if the order had a value as in the case of numerals. What value this method has is largely in the phonics it accidentally teaches, but teaches very wastefully and inefficiently.

4. *The work-method approach.* This method seeks to teach the word as a unit of thought. Spelling out or sounding is not attempted. Every word has its own distinctive appearance and character and this fact is used to build up a vocabulary of visual word-images. Only words of which the meaning is fully understood are used, for thought-getting is an essential objective of this method. The same word should be recognized in whatever setting it is presented. The sight-meaning must be associated with the already familiar sound-meaning.

This psychological approach is used as a part of every practical reading method. By confining the earliest reading assignments to words that have often been met before and by avoiding the introduction of unfamiliar words, reading

for thought becomes possible as soon as the pupils can recognize a few words. The use of familiar words soon initiates pupils into reading certain specially prepared material by sight.

The weakness of the word method is that it does not give skill in deciphering new words, for which it must call the 'sound' methods to the rescue. Nor does it give skill in recognizing larger thought-units for which it must work in conjunction with the sentence and story methods.

5. *The sentence-method approach.* Since the sentence, not the word, is the unit of an entire thought, sentences rather than words supply the appropriate material for a teaching method which emphasizes thought-getting in reading. Even the child's earliest reading experiences must be intimately associated with the real purpose of learning to read, namely, getting entire thoughts from the printed page. For the time being, letters and even words are ignored in the effort to keep reading in its natural, fluent setting from the beginning. As lengthy illustrations of teaching reading through the sentence method are to follow, further description at this point will not be attempted.

6. *The story-method approach.* In the story method the interest is first aroused through a story which is then written in terse little sentences on the blackboard or on charts. The story has several short related sentences. The story method and the sentence method are essentially alike except that the story is a larger unit of thought. Knowing the story partially the pupils can learn to identify the sentence and knowing the contents of the sentence they can learn to identify the words. From this point the teaching launches into the word method by teaching the recognition of the word in and out of its setting and in different settings. The story method is dependent on the sentence method and the word method as integral parts of it.

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The various methods heretofore described can be classified into two groups, the 'sound' methods and the 'larger unit' methods (sentence and story methods). In between the two lies the word method which is a necessary part of both the 'larger unit' methods and the unavoidably logical next step of the 'sound' methods. The imitative and alphabet methods are indirect and unscientific attempts to get at the things that the 'sound', word, and 'larger unit' methods teach much more directly. The rest of the activities under the imitative and alphabet methods are only casually connected with the teaching of the reading skill.

Which method is best? As has been repeated several times, a good practical teaching method will utilize all of the more scientific approaches. The best practical method is a combination method.

Some people get their most vivid impressions through the eye, others through the ear, and some through the sense of touch or even through smell. Some are predominantly eye-minded, or ear-minded, or hand-minded, and any generally-used method of teaching reading must be prepared to assist children in the way in which they can learn best. In the argument as to which method is best we must always remember that no method is 'best' for all. Some children learn much better through one method than another. For this reason also a combination of methods may be better fitted for general use than a method emphasizing more exclusively any one of the various psychological approaches just described.

The suggestion given in the *Handbook of Suggestions for Teachers* holds good for Indian languages as well as for English because the difficulty of the beginner in reading, particularly if he be a small child of 6 or 7 years, is not only with the inconsistencies of spelling but with a highly com-

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plicated process. The suggestion of the *Handbook* is worth repeating.

'Of methods of teaching children to read, it may be said that no method is satisfactory which results in attention to the symbol at the expense of the meaning. Since the end is to train people to read rapidly the children should have some practice in reading as grown-ups do, by taking in the meaning of a whole group of words at a single glance. If children are to learn to read books by themselves in the early stages, as they usually wish to do, they must know something of the sounds of the letters in order to read new words, and they will understand these sounds all the better if they learn them in connexion with their speech training.'[1]

Whatever the method, it must be designed to accomplish the above; and it must be preceded and accompanied by considerable free language work and activities stimulating development of language, for one cannot learn to read meaningfully when the material presented has no connexion with one's experience.

Let it be assumed then that both the phonic and the 'larger unit' approaches are necessary. Two questions still remain: With which method should the start be made? How much of each method should be used?

I have had about ten years' experience in introducing the sentence and story methods into Indian primary schools (in Hindi) and have had some connexion with the development of a series of readers on the story method for primary schools in India, as well as having a share in the construction of adult literacy primers which largely use the phonetic approach. I am convinced that although adults can make rapid progress by the 'sound' methods, small children cannot. I would advocate for small children a method using phonics (most certainly) but predominantly the sentence and story method. But let it remain a debatable, or rather experimental, point as to how much of both methods should be introduced in the beginning stages. Let there be

[1]Board of Education, *Handbook of Suggestions for Teachers*, p. 93.

a great deal of careful experiment under expert scientific supervision before we try to settle that point. The fact remains that the teaching of reading in India suffers very severely from a lack of (*i*) attention to understanding of content and (*ii*) the fostering of independent reading habits both for pleasure and for assignment reading in the classroom. For both purposes the 'larger unit' methods can help a great deal.

As the procedures in teaching phonics are much better known than the procedures in teaching through the sentence and story methods, a series of lessons using the latter methods are given for illustration. If it is felt that phonics should be introduced in the beginning stages, let this be tried. The purpose of the following illustrations[1] is not to settle when to introduce phonics but how the 'larger unit' methods may be used from the beginning. There are many other practical methods but this happens to be one in actual use in both Hindi and Urdu and is, on the whole, successful.

From Lesson 1

'*Procedure.* The teacher and children sit in a circle for a lesson of conversation. The object of this lesson is to get the children to talk naturally and freely. The teacher asks each child his name. He asks about their fathers and mothers, brothers and sisters. He asks what the various members of the family do. He asks what animals they have at home, what their names are, and what colours they are. He asks the children if they bring water for the animals and grass for cows and buffaloes. Then he asks how the animals help the family, etc.

During the conversation the teacher shows Chart No. 1. The children talk about the boy in the picture, his home, father, mother and animals.'

From Lesson 4

'This lesson consists of reading and learning to recognize

[1] Taken from the *Teachers' Guide for Class I* of the *Moga Readers* by E. J. Smith and Labhu Mall. The *Guide* is available in English, Urdu, and Hindi.

readily the names of the children. Each child is given a card with his name written on it. He is told that this is his name and he compares it with the name written on the picture made the day before.

1. The teacher has one set of cards with him. He holds up one card and the child whose name is shown stands up or holds up his card or in some way indicates that he recognizes his name.

2. The teacher writes a name on the board. The child whose name has been written stands up or in some way shows that he recognizes it.

3. The teacher writes the names of all the children on the board. The children all stand up facing the board. The teacher points to a name and the child whose name was pointed to turns around.'

From Lesson 5

'The purpose of this lesson is to teach the children to read a whole thought naturally and quickly. Emphasis is also laid here on reading from right to left.'[1]

The teacher points to the picture of the boy on the chart and asks the children what they see. They reply "*Larka*". Then he points to the house and asks what it is. They reply "*Ghar*". The teacher points to the picture of the boy and says, "*Yih larka hai*". He points to the picture of the house and says "*Yih ghar hai*". Then he reads the sentence "*Yih larka hai*" from the chart, running his finger or a pointer under the sentence as he reads. He reads the sentence "*Yih ghar hai*" in the same way. The teacher reads the sentences several times and after that the children take turns reading both sentences. The children also should run their fingers or a pointer under the sentences as they read in order to learn that they should read from right to left. They should read quickly and naturally. They should not point to and read individual words. Later they will have drill in recognizing words. The important thing at this stage is that they should learn to read a complete thought rapidly and naturally.

The teacher writes both sentences of Chart No. 2 on the

[1] In Urdu.

board. The children read them again, first from the chart and then from the board. He says: "Where does it say '*Yih larka hai*'?" They reply by reading the sentence from both the chart and the board, running their fingers or a pointer under the sentence as they read. The teacher continues with this exercise until each child has had a turn at reading at least one of the sentences.

The teacher shows the children the slips on which the sentences are written. They compare them with the sentences on the chart, reading the sentence from both the slip and the chart.

The children make a boy and a house in sand or with clay and they place the sentence "*Yih larka hai*" beside the boy, and the sentence "*Yih ghar hai*" beside the house.

From LESSON 8

'All the sentence slips are placed on the floor or in some place where the children can see them easily. They should be spread out so that they can see the eight slips all at one time. The teacher asks questions like this: "Where does it say '*Barkat ke ghar ek bakri hai*'?" A child hunts for this sentence among the slips, picks it up, matches it with the one on the chart, and reads it aloud from both the slip and the chart. Then the teacher asks some other child to find another sentence. This is repeated until all the sentences have been read and each child has had a turn.

The teacher writes the sentences on the board, using the names of the children sometimes instead of Barkat.

The pictures of the animals are distributed among the children. The teacher calls out the name of an animal, as "*Gae*", and a child who has a picture of a cow comes forward and places the picture beside a sentence on the chart or board in which the word *gae* is found. This is continued until all the pictures have been used and each child has had a turn.'

From LESSON 12

'This is a lesson for recognition of words, but so far as possible the words are seen in sentences.

The word cards are distributed among the children. The teacher writes the sentence "*Yih larka hai*" on the board.

This is a sentence they have read before. They read it from the board. Then the teacher erases the word *larka*, leaving the other two words with a vacant space between them. The child with the word *gae* comes forward and holds his word in the vacant place. This makes a new sentence, "*Yih gae hai*", which the children read. Then another child puts his word in the vacant place and they read the new sentence. The following new sentences are made in this way:

Yih gae hai.
Yih Barkat hai.
Yih bakri hai.
Yih bhains hai.
Yih murghi hai.
Yih ghar hai.'

From LESSON 13

'After this the teacher takes all the word cards. He makes the sentence "*Yih larka hai*" with the cards on the floor where the children can all see them. Some one reads this sentence. Then he picks up the word *larka*, putting in its place the word *Barkat*. The children read this and he changes the card again. In this way he makes as many sentences as possible with the word cards.'

From LESSON 17

'In this lesson the children should learn to read the sentences silently and do what the sentence tells them to do. At first, the teacher will help the children to read the sentences and will teach them the new words from the chart and the word cards. He will explain to them that when he points to the sentence "*Murghi men lal rang karo*", they should read it silently and colour one of pictures of the hen with the red crayon or chalk. When the children understand this fully, the teacher will give each child a chance to read a sentence silently and to colour the animal mentioned in the sentence.'

From LESSON 22

'The teacher ...... draws attention to the four sentences at the bottom of the page and tells them to read them silently. After reading them silently, they read them aloud.

The teacher tells them they are to cut out these four sentences and paste them under the picture they tell about. He gives them scissors and shows them how to cut out the sentences, telling them to cut them carefully on the line.'

From Lesson 26

'The teaching of phonetics begins here. The teacher repeats the words *bakri*, *Barkat*, and *bap* slowly. He tells the children that these words all begin with the same sound and he gives the sound of ب. He repeats the words again and the children by turns repeat them after him. He asks them to say other words that begin with the sound ب. If they are unable to think of words, the teacher says the words he thinks of beginning with this sound, as *bartan*, *bail*, *badshah*, *balti*, *bij*, *bulbul*, etc. The teacher should write a list of suchwords beforehand as it is difficult to think of them on the spur of the moment. The teacher again asks the children to say words that begin with ب. They will probably not think of any new ones the teacher has not given. The name of the letter ب should not be taught here.'

When the method just illustrated is used, six distinct steps must be followed. If any of these is left out the purpose of the lesson cannot be achieved. Teachers who are not successful with this method (any intelligent teacher who prepares well and takes care can succeed) usually owe their failure to the fact that they do not follow through these steps to their conclusion. These steps are

1. Telling the story and showing pictures. Discussion.
2. Making suitable reading sentences with the help of the pupils about the story or pictures.
3. Reading these sentences from sentence cards, blackboard, etc.
4. Identification of sentences, matching pictures with sentences, and sentences with pictures.
5. Cutting up sentence cards into words and getting the pupils to identify words through matching, selecting, etc.

6. Making new sentences from the known words.

If phonics are taught at this stage, the next two steps should also be included.

7. Breaking up words into letters.
8. Building words out of the letters.

The kind of vocabulary-controlled literature that is helpful in giving sufficient practice in the forming of word-images is illustrated by the supplementary reader *Sonu's Garden.*[1] This is one of several supplementary readers for each class published in the Moga series. Given this kind of literature children can find their way through the book by themselves with only occasional help from the teacher. This gives a sense of accomplishment to the children and awakens in them pride and pleasure in their skill.

> 'Sonu made a little garden.
> He said " This little garden is mine.
> I made it for myself."
> A rat came to the little garden.
> The rat said " May I come into the garden ? "
> Sonu said " No, no.
> You may not come.
> You will spoil my garden.
> This is my little garden.
> I made it for myself."
> A cat came to the little garden.
> The cat said " May I come into the garden ? "
> Sonu said, " No, no.
> I did not let the rat come in.
> I cannot let you come in.
> You will spoil the garden.
> This is my little garden.
> I made it for myself." '

(Thereafter a dog, a goat, a tiger, a horse, an ox, a camel, and an elephant came in succession. In each case almost the same conversation is gone through giving good practice in using the same words over and over again in a slightly different setting. This makes the reading so easy that after

[1] By Miss C. L. Justin, Published by the North India Christian Literature Society, Allahabad, 1934.

the first two or three pages the pupil can read several more pages with almost no help.)

The final scene of the story is:

'The mother of Sonu came to the little garden.
Mother said "May I come into the garden?"
Sonu said "Yes, yes.
You may come in.
You will not spoil the garden.
This is your garden.
I made this garden for you."'

When children read orally, as naturally the teacher makes them do nearly every day, the reader should not be corrected for all sorts of mistakes. Rather the teacher should let him alone and see how much he understands. If he understands, he is making splendid progress. In time the trivial mistakes will be eliminated. It is much better to let children make trivial mistakes and read with understanding than to have them perfect in detail but weak in understanding. The emphasis should always be on thought-getting, just as in learning to ride a bicycle the whole aim in the beginning is on getting onto the cycle and riding away. No matter if the cycle swerves inordinately and the handle-bar technique is faulty! The thing is to keep the cycle going without falling off or bumping into a tree. All else is unessential detail for the time being. Control and finesse come later. In reading the thing is to keep the reader going so that he gets at least the main trend. Mistakes in gender and pronunciation and occasional wrong words are removed through more reading.

Once, when I was teaching adults to read, a young man came to me who had attended school but had never passed Class I. He now wanted to learn to read. He recognized a few letters but that was all. The first day he didn't do much better than those who had never attended school. The second day he went through two lessons and the third day almost finished the primer. His enthusiasm knew no

bounds. By the fifth day he was making good progress in an interesting supplementary reader for Class II. On another occasion, a primary school teacher whom we will call Mangal offered to help teach. The reader read orally a story he had never seen or heard. Mangal corrected him every second or third word. At every wrong gender sign (either in word-ending or *ka, ke, ki*) he jumped on him triumphantly with a correction. The reader was greatly disturbed in his reading. I asked Mangal to let the man go on reading no matter how many mistakes he made. Mangal did his best not to interfere but it was against his every instinct as an orthodox teacher to permit mistakes to go on. At last I whispered to him to count the number of mistakes. Kept busy in this way he succeeded in keeping quiet.

At the end of a three-page story Mangal said there had been 32 mistakes since the middle of the first page. But when we asked the young man if he could tell us the story he gave us the gist of it so well that there was no doubt about his having understood. Mangal was completely mystified as to how a man could make 32 mistakes and still understand. But he was convinced that the man got far more out of the story uncorrected than he would have got with continuous interruptions. Mistakes in reading are not serious as long as the understanding is not impaired. The perfection in reading which teachers are so eager to get will never be obtained as long as readers are not allowed to get the meaning first and letter perfection later. Attention to close detail in the beginning stages is the wrong psychological outlook in reading. It entirely defeats its main purpose.

Small children are more defenceless than this adult and have to submit to continuous corrections. But it kills the joy and progress they might have had were they allowed to

read as independently as possible in a spirit of eagerness to find out what the book says. In silent reading the teacher does not know what mistakes in detail are being made by the pupil. This is another point in favour of silent reading.

Old-fashioned primers are distinguished by their authors' attempt to make the first lessons easy by using only two-letter, or at most three-letter, words. The second lesson may contain all three-letter words and the third lesson some four-letter words. Such books are written in the belief that two-letter words are the easiest, three-letter words next easy, then four-letter words, and so on. This may seem very logical to adults but unfortunately it is not based on observation and the facts simply refuse to adjust themselves to adult reason. Although it is true that short words are in themselves easier than long words, it takes only a little experimenting to find out that children distinguish words better if the words are not all of the same length. A series of words all of the same length is more apt to be confused than a mixture of long and short words. Such little innocent-looking two-letter words as *if* and *is*, *of* and *on*, *in* and *on*, *so* and *no*, *on* and *no* are very often confused. Very short words have fewer distinguishing marks than longer words. Probably they are taken for granted too readily.

Let the reader contrast a lesson from a very widely-used primer[1] in an Indian language with *Sonu's Garden* or the Barkat material from the standpoint of intrinsic interest, provision of adequate repetition of all words introduced, naturalness, and likelihood of the book stimulating children to want to read it.

> *'Ab uth. Ghar chal. Jal bhar. Bas kar. Hath mat kar.*
> *Ab jhat a. Chhat par charh aur yih am chakh.'*

[1]The Department of Public Instruction, Central Provinces, (Old) Hindi Primer, p. 15.

In the original Devanagri only two words are longer than two letters. Here is a translation:

'Now arise. Go home. Draw water. Enough. Don't be stubborn. Come quickly now. Climb on the roof and eat a mango.'

Note that the sentences are not connected and that there is almost no repetition of words. This is the first reading lesson in the primer. The contrast of these books illustrate the difference in outlook and method.

V

WHY AN IMPROVED WAY OF TESTING IS NEEDED

THE technique of testing reading has had much to do with the development of newer methods of teaching this subject and with the analysis of the many problems involved in teaching it. Reading tests are the means by which a teacher can see what he is about; what he has, or has not, succeeded with; what his pupils still need and what he can take for granted they have accomplished.

The question of measuring reading ability is one of the most important with which this book deals, for it is impossible to work intelligently for the improvement of any skill unless one can satisfactorily appraise present ability and locate points of weakness. False standards have come into practice through the use of testing methods which are positively misleading and encourage the development of habits which are injurious to further progress.

There are different purposes for testing which must be clearly distinguished, such as:

1. To find out which pupils should pass or fail.

2. To find out the relative abilities of different pupils.

3. To find out whether a unit of work is sufficiently understood to warrant going on to the next step.

4. To find out how one's teaching methods are succeeding.

5. To find out whether the kind of material one is teaching is too hard or too easy.

6. To judge progress.

7. To give pupils the necessary information about their own ability so that they may take an intelligent part in their own progress.

8. To find out the specific weaknesses of a whole class.

9. To find out the specific weaknesses of individuals.

10. To find out how quickly pupils forget or deteriorate in a skill when practice is abandoned.

11. To find out if 'foundation repair' is necessary.

12. To survey the abilities of the class at the beginning of the year to see just what is needed.

The external examiner is interested only in the first two items on this list. The teacher or supervisor is interested in all of them and more, because this list is not by any means exhaustive.

The teacher may even use what appears by its form and content to be a test, as an actual work assignment or study help. His uses of testing devices are indeed extremely broad. He cannot any more proceed intelligently in the teaching of reading without testing tools than a carpenter can do exact work without square, rule, level, and plumb-line. Without good testing technique he works by mere guesswork and the work is correspondingly crude and inefficient. The traditional examining method in reading, which is still used almost exclusively in the majority of Indian schools, is a hopelessly crude measuring and checking device.

To test pronunciation, enunciation, and ability to read acceptably to an audience, the examination must of course be through oral reading. But most other points can best be examined through silent reading. It should be understood thoroughly that oral reading and silent reading are psychologically two quite different processes and therefore the distinctive aim of both must be kept in mind when measurements are planned.

For the testing of understanding, silent reading is generally acknowledged to be superior to oral for the following reasons:

1. The reader actually understands silent reading better. The act of reading orally diverts the understanding in several ways. The normal way of reading is silent reading, and the examinee should be given the right to his normal way of performing.

2. Only one oral reader can be tested at a time, but an entire class can be examined at once in silent reading. When examinees are taken one by one the examiner is extremely unlikely to examine understanding comprehensively enough really to find out what is understood.

3. With silent reading the examining can far more easily be made objective, thus making objective standards more easily possible. Records are also more likely to be kept.

4. The rate of silent reading of an acceptable reader in a secondary school is higher than that of his oral reading. Speed cannot well be measured in oral reading except during the immature stages.

5. Silent reading can distinguish between the various types of reading (such as reading for general effect, for detail, for ability of organization, etc.) much better than oral reading can.

6. No reader remembers everything or notes everything as he reads. Many of the most pertinent questions raised in a passage or by the examiner become clear only after the passage has been completed and may be dependent on some fact given in the beginning of the passage. A silent reader may more easily and naturally refer back than an oral reader.

7. Such important and useful skills as 'skimming' belong entirely to silent reading.

If the purpose is to test ability to understand, it goes without saying that the passage given should be an unseen passage. A passage that has been read many times before

and discussed in class at length is totally unsuitable for this purpose. A test based on such a passage is more a test of memory than of reading, and is conducive to the setting up of very misleading standards. Much, and in some schools in India practically all, of the testing of reading is done from passages of the official textbook. That cannot be considered a test of the reading skill but merely of familiarity with the contents of the text. Many a student goes all the way through high school without his reading ability once having been given a reliable rating. Since the utility of reading is largely that of being able to get the thought out of books, letters and papers of which the contents are not already known, the only acceptable way of testing reading ability is from unseen passages, or at least from passages that have not been discussed and studied.

The following pages will contain a good many test forms. These are to be considered as having been planned for the broad interests of the teacher rather than for the narrow interests of the external examiner. Some of them are in the forms of the so-called new-type tests.[1]

[1] It is not the purpose of this book to present the different 'new-type' ways of testing. For that the reader is referred to my *Suggestions for the Use of New-Type Tests in India*.

VI

ORAL READING

THERE is hardly any need to insist that silent reading as well as oral reading should be taught in school. The need is generally admitted in India although there is still relatively little provision made for teaching silent reading. This is largely because our theoretical educational psychology is ahead of our practice—the practice suffering more from hesitancy through lack of knowledge than from opposition on principle. When silent reading is introduced, how should the work be divided between oral and silent reading? A great deal of confusion on this point still exists. Some teachers are under the impression that silent reading becomes a new subject introduced into the already overcrowded curriculum, oral reading continuing practically the same as before. This is not the case.

After the first two years of schooling, nearly all the practice and recreational reading, except so-called 'audience reading' and speech improvement (such as pronunciation, enunciation, etc.) should be silent reading. This is not to assert that there should not be considerable oral language work, but this should not be closely connected with reading. The question of how the teacher can judge the reading ability of the pupil adequately without regular oral reading sessions will be answered in the next three chapters.

Oral reading competes but poorly with silent reading in providing sufficient practice. Starch, in his *Educational Psychology*,[1] gives the following as the reading attainment of a school which he evidently considers good but not

[1] Daniel Starch: *Educational Psychology*, p. 280.

exceptional. In this school pupils selected their own books from the library.

TABLE IV

CLASS	I	II	III	IV	V	VI	VII	VIII
Maximum number of books read by any pupil	38	96	90	150	101	120	105	100
Minimum number of books read by any pupil	20	45	41	29	42	20	17	18
Average number of books read per pupil ..	31	65	63	80	77	47	42	55
Average age of pupils ..	6	7·1	8·3	9·2	10·3	11·4	12·2	13·1

If it occasions surprise that fewer books are read in the highest classes than in the middle classes, it should be remembered that those read in the higher classes are much longer. We may safely assume that there is a decided increase in the amount and difficulty of the material read in the higher classes. Evidently all this reading was not done in the reading or language period, nor even in school hours, for pupils were allowed to take the books home and no doubt read much in leisure hours on their own initiative. Silent reading has not only the advantage of speed over oral reading but becomes more or less individualized instruction which permits each pupil to forge ahead according to his own ability and interests. Teachers should appreciate and encourage all silent reading done by pupils in and out of school and not confine their reading to the classroom under surveillance at a rate dictated by the slowest and least interested pupil.

But what is there left for oral reading to do? The answer is that it usurps very little of the time-table but comes into its own by performing a distinct service hitherto rather neglected. Let us first consider the service of audience reading.

1. Audience Reading

There are numerous occasions when not merely oral reading but *good* oral reading is required. Such occasions arise in connexion with religious observances, patriotic or political meetings, literature-appreciation groups, reading to the sick, and so on. Very little practice of this sort is given in the typical classroom with results that are in accord with the neglect. Nothing can be more annoying than to have the secretary of a society read his minutes so that even those in the front row can barely hear him, or to have him read so fast and indistinctly that he might as well be talking Eskimo language for all that it benefits his listeners. Some well-educated men and women cannot even read a simple Report without appearing pathetic. A group of friends taking turns to read orally something of common interest may be doing important group-thinking of which there is far too little. The school can render a real service by training acceptable audience readers.

In all such reading a shared interest is the bond between listener and reader. A reader without poise who stumbles through his notes with an air of careless indifference neither edifies his audience nor makes easier the work of a committee, commission, or group which has serious business in hand and wishes to do it with dispatch.

Such reading can be taughtproperly only in a real audience atmosphere. This the school can and should certainly provide. The following quotation illustrates the point.

'1. The audience reading period should be unique among the periods of the school day. Children and teacher should approach it with pleasure and anticipation. The teacher or the children responsible for the period should stimulate curiosity and interest in the material to be used.

2. It is important that the material read should be something that the group actually wants to hear.

3. The word "audience" connotes listeners; in "audience reading" no book should be in evidence except the one

held by the reader. If pupils are reading in turns at sight, the child who has read can easily pass the book to the child who is to follow and if the teacher selects the logical breaks in the composition, the pause is not detrimental. The word "audience" also connotes a group seated in an informal manner. Teachers who are so fortunate as to have movable seats in their classrooms can arrange them in a double semi-circle. In rooms where seats are fastened to the floor, children may sit together. In both cases the reader will sit facing the audience.

4. The laboratory, or practice, period and the audience-reading period should be kept distinct. No reader can give himself over freely to the interpretation of a passage if he expects to be interrupted for corrections. Children who read to an audience are entitled to the same courtesy that should be shown an adult reader.

5. It is also important that no poor audience reading should be permitted. Every child should succeed. The teacher should know what each child is capable of doing and not allow him to attempt something for which he is not ready. Pupils should be encouraged to examine with the teacher or with another pupil, before reading, material with which they are not familiar, even when the passage is to prove a point or to amplify a statement in a geography or history period.

6. Few questions should be asked during such a period. Questions should refer to character, situation, or central idea. Such a question as "Why is this a good title for a poem?" illustrates the last-named type."[1]

In such a situation as that described above something real is being done to develop the personality of the pupil. Feeling at home in such an atmosphere and being able to take an active part in it gives poise, self-respect, and respect for others. It is a part of culture.

The common practice of correcting the reader at every third or tenth word and of snapping in questions in the middle of a sentence is in sad contrast to this. Dramatic

[1]National Society for the Study of Education: *Thirty-sixth Year-book*, Part I, p. 314.

readings can be used most profitably. We do not refer here to giving a play on the stage. This should undoubtedly be done once or twice a year, but the putting on of a play with all its memorizing, preparation of costumes and rehearsals is impracticable except on rare occasions. But no little enjoyment can be given to the readers and a small select audience through a well-read play in which the character parts are assigned to different individuals. This takes comparatively little rehearsal and contains most of the benefits to be derived out of a properly staged play. Acquaintance with a large number of plays can be achieved in this way and plays may be read with enjoyment that are too long and elaborate to stage. During such readings little, if any, action is attempted ; but there is ample opportunity for reading understandingly and expressively. The teacher with a flair for elocution will find such dramatic readings rich in possibilities.

There is also ample opportunity for workaday audience reading. Progressive history and geography classes make much use of reports and book reviews prepared on special assignments by individuals, special committees, or the whole class. Where there is some student participation in the regulation of the discipline of the school and in hostel management, where there are citizens' clubs, athletic clubs, debating or literary societies, assemblies and devotional periods, there is ample opportunity for care in the type of oral reading done. A good standard should be insisted upon. A social conscience should be developed which will prevent some people getting up to speak and wasting the time of others through their inefficient way of reading or presenting their material. If oral reading has been pushed into the background, in respect of time allotted to it, since the introduction of silent reading, it has on the other hand achieved a new importance inasmuch as it is now realized

that the poor silent reader wastes only his own time while the poor oral reader wastes the time of his entire audience.

2. Oral Reading for Practice

When should the teacher train his pupils in audience reading? When the audience is assembled, even though it is composed *only* of regular members of the class, is not the proper time. There may be short sympathetic critiques when all the readers have finished, but the humiliation of any reader should be carefully avoided.

As a rule, however, the teacher will gain far more by testing and correcting enunciation and pronunciation with individuals or small groups. This can easily be arranged. While the majority of the class is busy with silent reading, small groups or individuals can be called for consultation. This permits a much more personal and sympathetic approach which the pupil appreciates. It saves thirty-nine people from listening to what applies only to the fortieth. In this hour the teacher can point out to the secretary of the student council, who read his Report very poorly, how to go about his reading. Before a poem is read to the literary club or to a class assembled for appreciation of literature, the teacher can see that the person appointed to read understands well what is required of him. Hints should be given on how to use his voice, how to stand before the audience, and so on. The way in which the teacher himself does these things will have far more teaching power than anything he can say about it. A quiet, restrained and well-modulated voice carries its own suggestion.

One secret of fluent oral reading lies in training the eye to travel a little ahead of the voice, that is, one should see the words two inches or so in advance of the word one is speaking. When the eye lags behind with the voice there is hesitation and stumbling when an unusual word

suddenly appears. If the eye is ahead of the voice and meets a snag, it has time to untangle the difficulty before the voice catches up, thus preventing a halt. The eye of a good oral reader is usually about two fixations ahead of what he is reading. This does not interfere with speaking. On the contrary, it is an aid to expression. One phrases better when one knows what is coming. The eye can keep a watch on what is coming and make suggestions for phrasing without in any way inconveniencing the reader. This scouting ahead of the eye is called 'eye-voice span'. Good oral readers have a large eye-voice span. A little practice will illustrate what is meant. This little trick should be taught to pupils, for many of them have never realized its existence or helpfulness.

VII

ELEMENTARY PHASES OF READING

THE elementary phases of reading are phonetics (and phonics), word-recognition, and sentence-comprehension. The first two are exclusively primary-school subjects in the sense that the pupil entering the secondary school is supposed to be so proficient in them as not to need further instruction. In sentence-comprehension also he is supposed to be beyond the need of much help.

We will not concern ourselves here with phonics, except to warn the teacher of Class V that not infrequently his pupils will need special attention in this respect. Whether or not a pupil has need of it can easily be discovered by giving him a passage to read orally with a few unusual words in it, and by giving him dictation.[1] Faulty hearing is a decided handicap in phonics and phonetics.

About 25 per cent of the pupils coming into Class V do not recognize words readily enough to enable them to read easy unseen passages orally with acceptable fluency. They cannot expect to develop proper eye-movements. Given time they can recognize or decipher 99 per cent of the words they are expected to meet in ordinary reading, but they do not do this quickly or easily enough to permit the development of good reading habits. Quick and accurate word-recognition is a prerequisite for fluency in reading, for development of speed and accuracy, and for proper understanding. Hesitancy in recognition is a decided deterrent to understanding; the attention is occupied with the mechanics of reading instead of with comprehension.

[1] Usually spelling troubles in a phonetically written language are a sign that 'brushing-up' is needed in phonics.

How can we tell whether children recognize words quickly enough? The old-fashioned oral reading test was intended to examine ability in word-recognition. That is practically all it paid attention to, as if word-recognition were the only skill involved in reading. Even so, it defeated its own object by employing familiar reading matter, enabling a pupil who already knew the contents of the page assigned for reading to slide successfully over many a word that he was not able to recognize in isolation or in a different sentence. Many a word was guessed from its context and not actually recognized in its printed form. The meaning of a word but not the word itself should be guessed from its context. An unseen passage to be read orally makes a good test for recognition of the words contained in the selection, although here again the context gives more suggestion than we want it to.

A test like the following, modelled on Ballard's *One Minute Reading Test* is greatly preferred to the foregoing. A pupil is given one minute in which to read. He is told to read as fast as he can but to read carefully so as not to make mistakes as they will count against him. Then the number of words read without error is recorded, and compared with standards for the class and age-group. This test is not easily translatable and the standards given are valid only in Hindustani in Devanagri characters. It is given here in its original form (except for its change into the Roman alphabet). The test is composed of isolated words rather than of fluent prose so that no suggestions may be obtained from context.

AB KAL CHAL BAS JAL HAT KAB TAK KAR JAB BHAR PAR IN US SAB TAB JAB GHAR EK PARH TUM KAI HAN TU MAIN KO NE SE KE DO A KE KI SO JA CHHU KHA MEN HAIN SAU HI YON AUR KYA KAN KIṢI KOI KHAT GHAS DUDH NADI SOCHA SETH WAISE LAL MERA MUNH KAM ABHI

SUI PANI AYA DHIRE DANA BAIL TEL TOTA JHUTHA GHORA PANCH KAUN KIRA KHET THIK JUTA JATI GALI GEND TUTA MOTA GURU PAON MAMA PICHHE KITAB KAGAZ SHARIR KAHNA SAMAY ADMI DUSRA KAPRA HAMARA SIKHNA SAHAS SARAK LARHNA MAIDAN BHITAR JORHNA TUKRA GARMI KITNA KATHIN KACHHUWA TITLI MENDAK SAMAN IMLI BADAL SACHMUCH DHANWAN PATHSHALA CHUPCHAP SAMBANDH TUMHARA MAHARAJ MAJBUT BARABAR PUKARNA PARIKSHA NIKALNA THAPPAR JHOPRI ANDHKAR KHIRHKI SWACHCHH HOSHIYAR AJKAL UPJAU DHAKELNA THAHARANA JHAPATNA UCHHALANA TALWAR SARALTA ACHANAK ADHIKAR DHANYBAD

The standards (or norms) for this test are, at the end of the year: Class I, 20; Class II, 42; Class III, 65; Class IV, 82; Class V, 100.

It was found that 20 per cent of the new pupils in the middle school get a score of less than 60 which is what an eight-year old child should be able to do, 43 per cent get less than 80. Less than 80 is not satisfactory. In Class III 25 per cent of the pupils do better than 80.

Pupils who do not read at least 90 words a minute probably do not recognize words easily enough to begin the more mature stages of reading. They need much practice in the reading of very easy material, drill on common sight-words, and flash-card work with words and phrases. Or it may be that their eyesight is poor so that an examination with the eye-charts is desirable.[1] Glasses may be needed.

Anyone can make a test like the above in his own language. Slavish translation is undesirable. Your own selection of words in your own language, starting with easy words and gradually taking in more difficult ones, is just as good. Such a test gives very significant information. It cannot tell us who the more understanding readers are but only

[1] See Appendix I

which readers fail to reach a satisfactory standard in the elementary but fundamental skill of being able to recognize words quickly.

Here is another kind of word-recognition test that is to be given silently on a cyclostyled sheet. *Time allowed*: 3 minutes.

Directions to reader. Finish one task that you are told to do before starting on the next task.

Put a number 1 in front of every word that is the name of a colour. After that put a number 2 in front of every word that is a tool. After that put a number 3 in front of every name of an animal. After that put a number 4 in front of every word that tells of 'something you can do'.

WALK	RIVER	BREATHE
GREEN	MOUNTAIN	KICK
POTATO	CLIMB	MONKEY
DOG	BLACK	DOLL
WRENCH	BLACKBOARD	DRINK
HOUSE	TIGER	SHINE
READ	CAGE	HYENA
ELEPHANT	CHISEL	STAR
BLUE	*rampa*	EXPLODE
WINDOW	LAUGH	PURPLE
FLY	ROOF	HAMMER
PLAY	CUCUMBER	*pipal* TREE
YELLOW	SAW	HORSE
MANGO	WHITE	*karni*
SCREW-DRIVER	TEACHER	BARK
CAMEL	TALK	MONEY
CHAIR	BUFFALO	BROWN
CLOUD	RICE	WELL
EAT	*khodari*	PUSH
SLEEP	*matka*	WOLF
RED	SALT	SING
FLOWER	MOTOR	NEWSPAPER
STAND UP	PINK	CROW-BAR

Those pupils who have been taught to read on the sen-

tence method or story method have had their attention from the beginning drawn to words in sensible combination and not in isolation. But many pupils coming to Indian secondary schools have been taught by methods which concentrate upon words in isolation, one word at a time without much regard to the meaning of the sentence as a whole. In rapid reading the individual word is more or less lost sight of, the stress being on sentence-meaning. Where sentence-meaning has not been stressed one may expect to find a number of mere 'word callers', or readers who successfully recognize each individual word but who do not know what the sentence was about after they have read it. They are reading words which happen to be arranged in sentence sequence but the reader has not discovered their relationship.

Such statements as 'He reads well but does not understand what he reads', though not uncommonly heard, show complete ignorance of what reading is. Reading *is* understanding; without understanding it is mere word-recognition.

There is no hard and fast distinction between ability to comprehend sentences and ability to comprehend paragraphs. Sometimes sentences are paragraphs and paragraphs are sentences. In testing sentence-meaning one need not hesitate to include two or three sentences at times.

A test like the following may be used to test the ability to read simple sentences. Such tests are easy to make and an ingenious person will find all sorts of attractive material to include in them which pupils delight in doing. This test should be written with 75 per cent accuracy by pupils in Class II. A pupil in Class IV should obtain a perfect score. Any pupil who comes into the middle school not able to answer it perfectly in 8 minutes, except for an occasional

careless mistake, must be considered weak in reading. It is, of course, a silent reading test.

NAME..CLASS............
SCHOOL..

1. Which school do you attend?..............................
2. What is your name?......................................
3. How many hands have you?.............................
4. How many brothers and sisters have you?..............
5. How many people eat in your house?.................
6. How many are two and two?...............................
7. A boy had three mangoes. He ate two. How many did he have left?....................
8. What day of the week comes after Monday? ....
9. Draw a circle and make a dot in the centre of it. ....
10. Write the names of two animals which eat grass. ....
11. After the farmer has cut the paddy and taken it to his threshing-floor what does he do with it?.................
12. Mohan went to the bazaar to buy a knife. A shopkeeper had some which cost 3 annas each. Another had some better knives which cost 4 annas each. Mohan wanted to buy a good knife. How much did he pay for it?..
13. What is that thing we see in the sky that shines at night? It appears almost as big as the sun but does not shine as brightly as the sun. But it shines more brightly than the stars do....................
14. One of the biggest animals that walks on the earth has a long nose. With this it picks up the things it wants to eat. Its ears are like fans and its legs are like pillars. What is the name of the animal?....................................
15. In my house are a dog, a parrot, an ox, a cow, a buffalo and a goat. All have horns but two. The parrot talks and eats gram. But it doesn't have four legs like the others.

    (*i*) In my house which animal has four legs but no horns?..........................

(*ii*) Which is the smallest animal among those that have horns ?....................

(*iii*) Which of the animals has two legs ?......................

16. A motor runs faster than an ox-cart. But when the road is too rough, the motor cannot run. It cannot go on a rough road like an ox-cart can. An ox-cart goes very slowly on a bad road, but it can go nearly anywhere.

(*i*) If you are going on a good road and you want to go as quickly as possible what will you take ? A motor or an ox-cart ?....................

(*ii*) If the road is too rough for a motor but not too rough for an ox-cart, which vehicle will you take ? ....

It pays not to scorn giving an easy test. If it proves to be too easy no harm is done. But sometimes one is surprised to find pupils for whom it is not too easy. A comprehensive test always includes some material intended to be too easy for the average pupil in order to put the spotlight on the weak pupil.

Another type of test that checks ability to understand sentences is the True-False test. The statements are all of such a nature that the pupil should know the answer. If he cannot correctly say whether the statement is true or false we may assume he is unable to read the statement intelligently. There should be at least 40 items in such a test.

1. The letter in the alphabet after C is D.
2. The month which comes after January is September.
3. Four-footed animals have two front feet and two hind feet.
4. Horses have three ears.
5. Iron is heavier than cotton.
6. Fish are better swimmers than monkeys.
7. Fish are better climbers than monkeys.
8. Boys of twelve are usually taller than boys of six.

9. In the monsoon it does not rain as much as in the dry season.

10. Ten is three times as much as twenty-nine.

The so-called 'following directions' exercises have proved of immense pedagogical value. They are one of the very best aids for developing understanding and a realization that print means what it says. Very little use has been made of them in India so that pupils will frequently watch such statements as 'Every pupil who reads this will kindly close his books, put them inside his desk, go out into the playing-field, and line up for a game of "three-deep"', being written on the blackboard without in the least bestirring themselves. They will read the statement without any idea that it means what it says. Sometimes one of the pupils will actually get up and read the directions orally in front of the whole class without the least action having been stimulated. 'Following directions' exercises are excellent for impressing meaning. Far too many people read without realizing that much of what they read is meant to be translated into action.

Following Directions

1. Draw a square and put a circle in it. Put a dot in the circle.

2. All boys like to play ball. Ramdas is very unhappy because he lost his ball. Draw a picture of the thing he has lost.

3. It is full moon tonight. This makes it very bright. You can see only the brightest stars tonight because the brightness of the moon makes it difficult to see less bright objects. Draw the kind of moon that is shining and five stars.

4. ______________________ ____________

Here are two lines. Write your name on the longer line if your name has more than four letters in it. If it has four or less than four letters in it, write your name on the shorter

line. Write the name of the village from which you come on the other line.

5. Write the name of the largest seaport on the west coast of India on the left side of this piece of paper and the name of the capital city of India on the right side.

6. 8 6 4 11 9 6 10

Cross out the number which is 2 × 2 doubled again. Put a ring around the number which is more than 7 but less than 11 and is divisible by 3.

One of the figures is not divisible by any whole number except 1. How much would you have to add to this figure to make it divisible by both five and three?............

Draw a square around the figure which is $1\frac{1}{2}$ times as much as the only figure which appears twice in the line of figures.

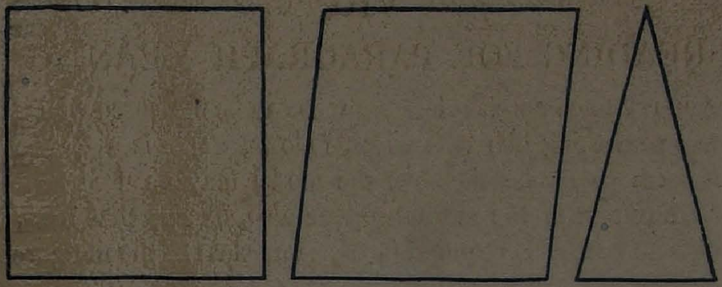
7. To make licence-plates for a motor-car, draw an oblong 4 inches long and $1\frac{1}{2}$ inches wide. Put the number 631-582 in the oblong, leaving a space of one inch to the right. In this space print the abbreviation of the name of your province. Use capital letters. Leave a little space under the abbreviation, and in this space put the year in which the licence was issued.

8. Read the story below very carefully and do whatever it tells you to do.

One day Grandfather was sitting on a bench drawing pictures in the sand with his cane. The boys and girls came to him and asked him to draw a picture specially for them. He drew the three figures below (p. 83) and then told the boys and girls to do something with these figures.

He said: 'In the first figure write A and B in the two top corners respectively and C, D in the two bottom corners. Then draw a line between A and C and another line between B and D. Divide the second figure into four parts cross-wise. Write the name of a different tree in each of the four parts, writing "*pipal*" in the division next to the bottom. In the third figure put a number 1 on the shortest side, a number 2 on the right hand side and a number 3 on the remaining side.'

All the boys and girls who heard this did so. You do likewise.



VIII

READING FOR PARAGRAPH MEANING

ABILITY to comprehend paragraphs can be measured with a test something like that which follows. This is a test in English comprehension but the model may be used in a reading test in the mother-tongue also, except that more difficult matter is required in the same class in the mother-tongue.

Directions. Read the following paragraphs carefully and be prepared to answer questions on them. In some of the questions a choice of several answers is given, only one of which is correct. Underline the correct one. *Time allowed* : 30 minutes

1. Perhaps the most faithful and the brightest animal that the world has ever known is the dog. For ages, the dog has been the loyal friend of man. He has worked for his master. He has saved him in times of danger. Such devotion should be returned with kindness.

(*i*) Man's ever-faithful friend is a dog, cow, cat, horse.

(*ii*) The dog has been tamed for years, ages, months, weeks.

(*iii*) Copy one word you read in the story that means 'strong affection'.

2. Not long ago, a man who had been unkind to Moti walked by the elephant's cage. A *pipal* branch came sailing through the air. The man stooped or it would have hit his head. Moti had picked up the *pipal* branch with his trunk. He threw the branch at the man who had been unkind to him.

(*i*) What did the elephant throw? water, cage, trunk, branch.

(*ii*) What kind of man was he? Good, unkind, slow, kind.

(*iii*) Copy one word you read in the story that means 'an elephant's nose'.

(*iv*) This story is about: (*a*) A pipal branch. (*b*) An elephant's cage. (*c*) A man and an elephant. (*d*) An elephant's trunk.

3. Among the writers of proverbs we must rank Benjamin Franklin very highly. His proverbs show rare common sense and have become famous the world over. Here are a few of his best known ones:

(*i*) 'Never leave that till tomorrow which you can do today.'

(*ii*) 'God helps them that help themselves.'

(*iii*) 'Early to bed, and early to rise, makes a man healthy, wealthy, and wise.'

(*iv*) 'Beware of little expenses; a small leak will sink a ship.'

(*a*) Franklin made many expenses, proverbs, beds, healthy men.

(*b*) Franklin was sensible, wealthy, rare, early.

(*c*) Write one word that means 'a wise saying'.

(*d*) Give the number of the proverb which tells us to be careful in spending our money.

(*e*) Give the number of the proverb which tells us that staying up late and sleeping long in the morning is not the best thing.

(*f*) Give the number of the proverb which tells us not to delay in doing that which we can do now.

(*g*) Give the number of the proverb which tells us that we must do that which we want done ourselves and not expect it to be done for us.

4. Dear Sirs

Please send me by goods train the following supplies:

6 dozen pencils at 12 annas per dozen.
2 quires Elephant Brand paper at Rs. 2-4-0
20 slates at 2 annas each.

Please do not send tin slates but stone slates. The paint comes off the tin slates very quickly and they are then useless. The railway receipt should be sent by V. P. P.

Yours faithfully
D. Singh

(*i*) Which item will cost Rs. 2-8-0?....................

(*ii*) Of which article are 72 wanted?....................

(*iii*) Who is dissatisfied with tin slates?....................

(*iv*) How will the money for the goods be sent?..........

5. When the moon passes between the sun and the earth, the sun is darkened for a short time. This is called an eclipse. At first we do not notice that the moon is in front of the sun but by the time the moon has blotted out half of the sun, the light is beginning to get dim. When the moon covers most of the sun it begins to get dark and by the time the moon gets squarely in front of the sun it is quite dark. Birds are fooled into thinking it is night, and go to sleep. This part of the eclipse takes only a few minutes, however. The stars are now shining even though it be noon time. Soon the moon is passing from in front of the sun and it begins to get light again. The sunshine gets stronger every moment. It takes about two hours from the time the moon first gets into the path of the sunshine until it is entirely out of the way again.

(*i*) There is an eclipse when (*a*) birds go to sleep, (*b*) the sun gets between the earth and the moon, (*c*) the stars shine, (*d*) the moon gets between the earth and the sun.

(*ii*) The time of greatest darkness takes (*a*) a few minutes, (*b*) until noon, (*c*) two hours, (*d*) until night.

(*iii*) Who is deceived, thinking it is night?

(*iv*) This story is about (*a*) the eclipse of the moon, (*b*) the eclipse of the sun, (*c*) darkness, (*d*) stars shining in daytime.

6. Many birds are found in India in the cold season that are not here in the hot season and monsoon. These birds are called migrating birds, that is, birds that regularly spend part of the year in one country and then fly away to spend the rest of the year in another country. To move to another country to live is called 'migrating'.

Among the migrating birds found in India, ducks are perhaps the best known. But not all ducks found in India are migrators. Several kinds of ducks stay with us all the year. The most common non-migrating ducks are ducks which at times rest on trees. Some of them even build their nests in trees. When you see a duck which sits on a

tree you may be certain that it is one of those which never leaves us the year round. The migrators are not tree ducks, neither do they hatch out their young in India.

Many birds are migrators besides the ducks, namely cranes, some snipe, a species of stork, and many song birds.

(*i*) Migrators are (*a*) ducks, (*b*) animals or birds that travel to another country to live, (*c*) birds that live in trees, (*d*) birds that build nests.

(*ii*) Ducks that have their young in India are (*a*) migrators, (*b*) non-migrators, (*c*) common ducks, (*d*) ducks that never sit in trees.

(*iii*) Name one bird that is mentioned as a migrating bird that is not a duck................

(*iv*) This story is about (*a*) ducks, (*b*) cranes, (*c*) migrating birds, (*d*) tree ducks.

Score 1 *point for each right answer.* TOTAL...........

The norms for this test (in English in Indian schools) are as follows:

Class VII	median score	9	answers correct out of	26
Class VIII	,, ,,	15	,, ,,	26
Class IX	,, ,,	20	,, ,,	26

A nearly perfect score should be obtained in the same classes if the test were in the mother-tongue.

The difficulty with a test of this sort is that it has to be printed or cyclostyled to make it practicable. If the test is cyclostyled, allowance should be made for the fact that such material cannot be read with the same speed as print. It is, however, possible to test pupils' comprehension of whole paragraphs without resort to the cyclostyle. The next chapter contains some devices showing teaching exercises and tests which can be carried out, without printing, provided there are enough books or papers available containing the passages to be read. The same plan can be adopted in the case of single or a small number of paragraphs though it will be more difficult to make such a test comprehensive, because of the need to stop the pupils' reading at the end of every paragraph to answer oral questions; and the fast reader must work at the same speed as the slow reader.

The memory should not be burdened with too much detail. When questions of detail are asked, pupils must be allowed to glance at the paragraph again because it is difficult to remember much detail at the first reading. The first reading of a paragraph is rightly spent in getting the sequence of thought. This requires some supporting detail, but if many details are given it must be expected that only the most essential are remembered. Where the whole meaning of a paragraph depends upon one or two stated facts we must of course expect these facts to be remembered.

Examinees should not be discouraged from glancing back to find the answers to questions. If they do not know the answer from the first reading this is the only thing to do. A poor reader may not find the correct answer even though he reads several times. Ability to find the answer at all is indicative of some reading ability. It will surprise many teachers to find out how difficult it is for some pupils to find the answer that is plainly written before them. A good reader will have to glance back less often and takes only a split second to glance back and find the answer. He will probably know just which part of the paragraph contains the answer even though he has forgotten what the answer is. If the test is correctly timed so that the best readers have just about enough time to finish and the poor readers cannot quite finish, the number of questions answered is itself an indication of the difference in reading ability assuming that both good and bad readers understand equally well what they read.

In most standardized tests the material is graded so as to increase in difficulty. In such cases the reader getting the highest score is not only speedier but has demonstrated his ability to read harder material.

How can teachers give practice in reading paragraphs

with understanding? The old practice of having a paragraph read orally and then asking questions on it is a usable method, but a poor and wasteful one. It means that probably only one pupil is working at a time. Since we want to encourage good habits of silent reading, a better method is to make each pupil read the passage silently and then answer questions asked orally or written on the blackboard. Pupils may either write their answers or simply be ready to answer orally if called upon to do so. Pupils are more attentive and work harder individually if this procedure rather than the oral-reading procedure is followed. Sometimes the teacher will ask a pupil to reproduce in his own words what he has just read. This is a time-worn but still highly commendable method and can be used with silent reading even better than with oral.

What actually is a paragraph? It is more than a collection of sentences. The sentences contribute to a definite mounting sequence of thought. Each sentence has its own thought to express, but all sentences contribute to a central thought which is the theme of the paragraph. The theme of a simple paragraph is usually expressed in one of the sentences or in a part of one of the sentences. Sometimes only a phrase is necessary to designate the theme. The theme may be in any position in the paragraph, oftener than not at the beginning but also often at the end or in some other position. A paragraph is a little story or essay in itself. There is no better reading or thinking exercise than that of identifying the 'topic sentence' in every paragraph, that is, the sentence which expresses the main theme of a paragraph.

Pressey in his *Diagnostic Reading Tests* gives a whole series of unrelated paragraphs. The examinees are instructed to read them as rapidly as possible and to underline in each one the sentence that gives the paragraph's central theme.

In the two examples given here,[1] the important sentences are printed in italics.

'1. *The amount of sleep a person needs depends upon his age.* A baby sleeps about twenty hours a day. A child of eight needs ten or twelve hours of sleep. Boys and girls of fourteen require about nine hours. But the average adult finds seven hours sufficient.

'2. The sky grew dark. The ocean waves grew bigger. The lightning began to flash. And the thunder came nearer and nearer. *Then the storm broke.* It lasted for over an hour. The wind blew and the rain fell steadily.'

Needless to say, such tests give a very clear indication of pupils' ability to separate the grain from the chaff in reading and finding out what the point of the story or discussion is about. Lacking this ability there can be no organization or true comprehension of what has been read.

Some children may have fair ability in sentence reading but have difficulty in getting insight into either the organizational structure of the paragraph in order to grasp its main thought or into the special contribution a particular paragraph makes to the composition as a whole. How can we train them to locate the central thought? By hunting for the 'topic sentence' with them, or by discussing with them what the subject of each paragraph is. One of the greatest aids I ever got from any teacher was from the one who, discovering that we were having a hard time reading Macaulay's essay on Milton went through the whole essay with us paragraph by paragraph. He let us read a paragraph silently and then asked 'What is the subject of this paragraph?' There were often some bad guesses but through discussion the class would finally come to some agreement as to the subject, which was then scribbled into the textbook; or, when the subject was expressed in terms of the 'topic

[1] S.L. & L.C. Pressey, *Diagnostic Reading Tests*, Form A (Public School Publishing Co., Bloomington, Ill.)

sentence', this was simply underlined in whole or such part as we decided to be essential. That was actually my first realization of the tremendous help that paragraphing is to both reader and writer. Whenever the subject-matter is difficult that kind of procedure should be adopted.

Especially would this prove helpful when students start to read a new subject. Suddenly, perhaps, a teacher has thrust upon them serious essays and scientific treatises, or historical material, which is quite different from the story material they are used to. It seems dry to them. No wonder, for they do not understand it. Their understanding may be greatly increased by help in 'how to study' material of this new and, to them, difficult sort. Many a teacher of science has never gone through a scientific treatise or essay with his pupils and opened up its possibilities to them.

Sometimes we all have to read material that is difficult for us. By practice, such material gradually becomes easier to read, but there should be a strict limit to the degree of difficulty in the material that is assigned to pupils. When pupils have serious difficulty in understanding and their interest is not aroused through such help as can be given, easier material should be chosen. The reading of much easy but interesting material is necessary to give proper 'paragraph sense'. The help of the teacher cannot always be given nor is it desirable that the teacher be associated with all reading. Reading material should be so easy that the pupil can organize it independently well enough to keep up his interest. Flagging interest is very apt to denote reading difficulty although we must allow for individual tastes. By easy or difficult we refer not only to technical difficulties, such as vocabulary, but to the appropriateness of the subject-matter to the reader's age and maturity. When, in dealing with isolated paragraphs, such as are

given in the paragraph-meaning test above, there is difficulty in choosing the central thought, easier material or material on a more familiar subject is needed for practice.

Poor readers choose books in which there is much conversation in short sentences or even incomplete sentences. They can understand this better because no assimilation of complicated thought-processes is necessary such as we find in a well-developed paragraph. Fiction is the almost exclusive reading of some people because in simple narrative the sequence of thought is largely self-evident.

A few thought-provoking questions before pupils attack a paragraph is a considerable aid to understanding. It stimulates the curiosity and gives some suggestion of what to look for. Such questions may be stated orally or written on the blackboard or put into an assignment sheet. They should form a regular part of classroom procedure until pupils are quite adequate readers of that type of material. Let us take, for example, paragraph 5 in the test on page 86 of this book. Pupils will be helped to get the meaning by such advance questions as

What causes an eclipse?
Does the darkness come on suddenly or gradually?
How dark does it get to be at the time of a total eclipse?

Similarly, we might prepare the ground for a better understanding of paragraph 6 of the same test by asking such questions as

Why is it that we see so few wild ducks in the summer months? What happens to them?
Do all ducks act in the same way in this respect? How can you tell migrating from non-migrating ducks?
Are ducks the only birds that behave in this way?

Questions asked after reading a paragraph also help the pupil to find out that he missed much while reading and to find out what he missed. This aids in the enrichment of the reading experience.

Every history or geography teacher, in fact the teacher of

any subject who gives references to be looked up or assignments which call for outside reading, has the exasperating experience of hearing his pupils say that they have read the assignment but are unable to report what they read. This is a most serious handicap in the class, for the teacher counts on pupils bringing intelligent reports of the assignment to class not only to show whether they actually did the assignment, but because the material they are supposed to bring is expected to contribute to the discussion. Perhaps such pupils did read the assignment faithfully, but are unable to remember what they read. They should not depend on memory alone but should make notes. Note-making to some pupils means taking down from dictation ; many haven't the remotest idea of how to take notes of a reading assignment. This they should certainly be taught to do. Getting them to write down proper headings for paragraphs is one very good aid. They will not need a heading for every paragraph. They will soon find that some paragraphs are subordinate to others, mere supporting detail. In other words they should write paragraph headings and then organize them into an outline. They are learning how to study and assimilate properly. Some such outlines of reading assignments should be worked out in the class, but many more should become familiar in greatly simplified form through the regular note-taking activity of pupils working on special assignments.

When they have learnt to do this from the printed material they will have acquired automatically a habit of organization that will also greatly help them in taking notes of lectures. Many college students cannot take notes ; they can only take down a few verbatim snatches. Practice in reducing literature to outline notes is a great help in giving proper weight to the important statements in a lecture.

The last part of this chapter has rather anticipated the next chapter on reading longer selections; however, paragraphs are not short isolated selections but organic parts of a larger whole and so cannot be treated altogether in isolation.

IX

READING LONGER PASSAGES

As the paragraph is to the sentence, so the longer selection (complete story, article or chapter) is to the paragraph. In the developed paragraph we have a number of sentences in relationship to each other. This relationship has a meaning which is quite often not discernible in the sentences in isolation. The longer selection is dependent for its interpretation on the inter-relationship of the paragraphs. This fact has been brought out in the preceding chapter.

A sentence or paragraph, except when it is meant to stand by itself, is not an end in itself but only a link in a chain. Nine-tenths of all sentences and paragraphs in books are simply parts of a whole and derive their full meaning only when the larger whole is understood.

When Hamlet was asked, 'What do you read, my lord?', he answered 'Words, words, words'. How pathetic! Reading only words, words, words, is senseless, for words thus isolated are devoid of that relationship to each other which gives sense. Almost as pathetic is the case of the reader who picks up a book and reads only sentences, sentences, sentences, or even paragraphs, paragraphs, paragraphs. He will miss the point for which the story, essay or treatise was written. Yet strange to say, some students go almost through the entire secondary school without having read connectedly, at one sitting without interruption, any passage longer than three or four pages. Of course that is not the condition everywhere in this country nor is this country the only one in which such a condition is found; but it happens not infrequently and we must assume that little emphasis is being put on reading longer connected passages.

For guidance in reading longer passages, silent reading habits and the practice of regular silent reading are absolutely essential. The common practice of oral reading nearly always splits up the selection so that the effect of the whole is vitiated. When comment is allowed between the reading of each paragraph, and when language exercises are indulged in, we may be certain that the effect of the whole is largely lost.

Of course some students perfect *themselves* in the special technique required to understand passages as a whole, but their number is small. There would be more interest in recreational reading if pupils knew how to do this. Absence of voluntary reading can be assumed in very many cases to be due to absence of ability to understand longer selections. Even a lazy reader, if he has the skill to grasp the plot or central theme, once he gets started on a gripping story keeps going and cannot close his book. To any one lacking this ability no book is interesting; no story can grip such a person because he misses the plot or theme even though he is reading words, sentences, and paragraphs. The difference between study and recreational reading lies here; it is a question of whether the interest has been so stimulated that reading a particular book is an enjoyable experience or not. What some people read only for study others read for recreation, the determining factor being interest, interest great enough to make the reader want to read this rather than do something else even though that also may be interesting. The complete absence of the habit of reading for recreation cannot all be blamed on lack of literature, for there will never be much literature where there is no real desire to read. Here is proof that the school has made a tremendous mistake in assuming that when the pupil has been taught to read according to the piecemeal practices associated with oral reading exercises, he can grasp the meaning of longer

passages which depend on the maintenance of interest. One can as logically assume that because a man is a good coolie he will be a good foreman, and because he is a good foreman he will make a good manager. The coolie-foreman relation may be taken to illustrate the difference in function between word-recognition and grasping the meaning of a sentence or paragraph, while the foreman-manager relation illustrates the difference in function between understanding isolated paragraphs and understanding longer selections or books.

The proper way to teach the understanding of longer selections suggests itself : it is simply guidance in the reading of such selections. Pupils are asked to read some longer selection silently. If interest has been previously aroused in it, this will be a tremendous advantage. In the beginning, especially if the passage is a little difficult or the contents new to the pupils' experience, this is essential. When pupils show definite progress in understanding longer selections this practice can be dropped as the selection can then be depended upon to create its own interest. A few stimulating questions put in advance are always a great help to backward pupils. This preliminary work must *arouse* curiosity, not *satisfy* it. Curiosity is the greatest driving force to voluntary reading.

The selection must be easy. That is, the linguistic and vocabulary requirements must not stand in the way of the reader getting the full effect of the story or message. The contents must be on an intellectual level (and here there will be found a wide variation in the class) to prove challenging to the readers—but the linguistic requirements can never be too easy. Not that a gradual introduction of finer distinctions through subtle linguistic effects is not necessary, but linguistic difficulties should not be thrown in the way until the much more essential accomplishment of understanding

and thorough enjoyment of longer passages has been acquired. The most popular writers of today are those whose writings have real content expressed in easy, natural, conversational language. Some of the greatest scientists living today write excellent popular science for the layman; their works are none the less profound because they are written in simple language.

One of the greatest misconceptions which beset the reading programme in middle and high school is the idea that everything in a class should be of the same linguistic difficulty as the passages in the prescribed reader. The staff of every school could do the school, its students and the syllabus an immense favour if they would try out every textbook used in the following way.

An entire chapter from the textbook which the student has not yet studied should be assigned for silent reading. Then a carefully worked out comprehension test, like those given in this chapter, should be given to find out what the pupils have understood. By all means eliminate from the test those pupils who have already studied the book before as it will not be a fair test of their reading ability: their score will be misleading. From the best results one can easily see whether the book is too difficult or not. The test will have to be carefully worked out with the purpose of discovering whether or not the main argument has been comprehended. There should be some testing of detail, but only of essential detail which readily illustrates the thesis. It should not be made a memory test of detail.

The results will probably be surprising. Unless the class get the main ideas fairly accurately and the details with at least 50 per cent accuracy, a sustained interest in a book of that level of difficulty is impossible.

But now let us get back to easier selections. The pupils have been assigned a complete story, chapter or article.

If necessary their curiosity has been aroused. (If the book has a continuous plot the reading of the previous chapters should be sufficient stimulus, provided it is naturally interesting to children of that age.) They are given enough time to finish the selection. At first it is not wise to stress speed, though when this kind of work has been done for some time, pupils should be urged to read as fast as they can without sacrifice to understanding.

When the reading is finished some sort of test must be made. This may be given in many ways of which oral discussion is one. This method is excellent for those that take part, but in most classes it is found that a proportion of the class takes no active part. The weaker pupils often depend on second-hand impressions gained from the reactions of the abler pupils instead of upon the impressions they themselves got out of the reading. The teacher may use the discussion method regularly in his teaching but must remain alive to its obvious weaknesses. At least twice a week the work of every pupil should be checked, particularly that of the weaker pupils because they have the greatest need of help. Such checks can only be made properly by talking with each pupil individually, or through the assignment of written work.

The written work should be very simple. If the matter read provides a subject for a written composition, the composition should not be stiff and formal. This would kill interest in reading. It should be in the nature of a free discussion. Mere reproduction in condensed form is also useful occasionally but should not be used often. Variety in the methods used is essential as they are soon worn threadbare.

A short exercise like that which is to follow does not prove painful, it takes only about five minutes in the actual writing, and reveals a great deal. The teacher need not

slavishly labour through all the written work. A minute on each paper gives him a pretty good idea of what each pupil has understood. When he knows the capabilities of his pupils better the teacher need only look through the papers of pupils about whom he has doubts. It is extremely beneficial to the student to have his own written material in his hands before the oral discussion begins. First, it ensures his actually having done something himself in the formulation of the answers to the teacher's questions; second, it is evidence to a pupil who is getting very little out of his reading that he has missed the essential points. This he will never believe if he is not first forced to put down his reactions on paper and thus be brought to see how much more others get out of their reading.

The questions in Table V were asked when a 1,200-word story on Magellan's circumnavigation of the world had been read. The main point of the story is that, until Magellan sailed, there was still some dispute as to whether the world is round, and Magellan's party, by actually returning to the home port after sailing only in a westerly direction, supplied the final proof. Pupils were given about 3 minutes to answer each question and did not want more. Their answers were classified as shown in the table.

TABLE V

	Main Points	Questions		
		What is the most important thing this story tells us?	Describe briefly the part which you found most interesting	What were the greatest difficulties Magellan had to face?
(a)	No. who gave intelligent answer revealing understanding of story as a whole	5	—	14

TABLE V (CONT.)

	MAIN POINTS	QUESTIONS		
		What is the most important thing this story tells us ?	Describe briefly the part which you found most interesting	What were the greatest difficulties Magellan had to face?
(*b*)	No. who had confused, vague notion about story	10	18	11
(*c*)	No. who missed essential points entirely	16	13	6
	DETAILS			
(*d*)	Fairly accurate	5	—	16
(*e*)	Medium	17	17	10
(*f*)	Grossly misunderstood	9	14	5

This exercise was given in Class VII. Some teachers might have said the material was linguistically 'too easy' for Class V. Evidently it was not too easy in this school which is well up to average in reading. It shows that more of this type of work should be done. Of course some pupils may have understood more than they are able to express readily in words but the marking was extremely liberal giving credit for the presence of the right idea no matter how poorly expressed.

Now let us give a more detailed test on some passage. It is necessary to print the passage as well as the test itself.

COLUMBUS FINDS A NEW WORLD

Two hundred years after Marco Polo returned from China and India, merchants travelled overland from Europe to

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India to buy pepper, cloves, and many kinds of spices which they did not have in Europe. However, the journey was long and dangerous and as it was by land most of the way not much could be carried. The people of Europe wanted Indian spices very much but the journey was so long and hard and dangerous that only the very rich could buy even a little pepper and spice. So merchants wanted more than ever to find a way for ships to go to India.

In those days the ships could not go as they now do for the way round Africa was not known. No one had reached the Cape of Good Hope. As you can see by looking at a map of the world, the two seas through which ships now travel to reach India from Europe, called the Mediterranean Sea and the Red Sea, are separated by a strip of land 100 miles long. Nowadays a canal, that men laboriously dug through this strip of land 65 years ago, connects the Red Sea and the Mediterranean so that even very large ships can pass through. This is called the Suez Canal and if it were not for this canal the journey from London to India would be twice as long as it is for ships today. But in those days there was no Suez Canal; and besides, merchants were very much afraid of the people who lived on the shores of the Red Sea and did not let the ships of foreign merchants pass.

Most people in those days believed that the world was flat and that if you went far enough you came to the end of the world and fell off. They thought that one end of the world was beyond China and the other end to the west of Europe. A few learned men said that the world was not flat like a pancake but round like a ball, but few people paid any attention to them or believed what they said.

But a young man named Christopher Columbus did believe them. He said, 'If the world is round, then if a man travels either east or west far enough he should come back to the place he started from. He should be able to travel all the way round the world.' Columbus further said, 'India and China are to the east of us. We reach them by travelling east. If the world is round we should also be able to reach them by sailing west. I am going to sail west and find a new road to India and China.'

When people heard this, most of them thought Columbus was insane. They asked 'How can you get to a place that is east of you by travelling west?' We know this can be done but few people in Columbus' day believed it could be done.

Columbus had no ships and therefore could not start on his journey. Very few sailors wanted to go with him. They said, 'Perhaps we will fall off the world if we sail west.' They also feared that fearful monsters lived in that part of the ocean which Columbus planned to sail through.

For many years Columbus travelled from one king to another asking for ships and sailors but no one would help him. At last the Queen of far-away Spain gave him three small ships and some men, most of whom were prisoners who would have been executed or would have had to remain in jail if they had not gone with Columbus. So Columbus started out to cross the Atlantic Ocean where it had never been crossed by men before.

First they went to the Canary Islands in the Atlantic Ocean. Then they sailed on and on, day after day, without seeing any land. There was nothing but the sky above and water all around. The sailors were saying, 'We shall never see our homes again. There is no land in this direction. We shall fall off the earth. Let us turn around and go home.' But Columbus said, 'Let us go on.' The sailors talked about throwing Columbus into the ocean and going home.

One day a sailor saw some birds flying over the endless water. Columbus said, 'See, where there are birds there must be land somewhere near. Birds can fly many hundreds of miles from the nearest land but eventually they must return to land.' The next day a sailor saw a bamboo floating in the water. Then all became hopeful that land must be near.

The next day a bush was seen floating by. It had ripe berries on it. The sailors knew that berries do not ripen while floating in the ocean and so the bush could not have floated very far.

That night they saw a light in the distance and in the morning they espied real land ahead of them, the first land they had seen for 37 days. The light they had seen at night was from the fire made by people living on an island.

Then all went on land to see what a strange country they had found. They saw many birds but they were different from any birds they had ever seen before. They found many trees and plants but not one was just like those in their own country. They saw men whose skin was much darker than their own skin.

Columbus said, 'This country is India, therefore these men must be Indians.' He called them Indians. But Columbus was many thousands of miles away from India and the people he saw were not Indians. That is why the oldest inhabitants of America, who were there before the white men came, are still called Indians although they live much further away from India than Englishmen do.

The Indians thought that the ships with their large sails were birds and that the sailors came to their country riding on big birds that swam on the ocean like ducks.

The land that Columbus and his sailors first saw was only a small island. They went on and found over a hundred more islands some of which were very small and some of which are larger than Ceylon. Then they went home taking with them strange animals and plants, and two Indians who looked as strange to the people of Spain as Columbus had looked to the Indians.

The Queen and all the people of Spain welcomed Columbus and gave him much honour. They were very glad to hear about the new lands and that at last a better road to India had been found.

Columbus went back three more times and found many more islands and the great continent of South America. We do not know if he ever learnt that the new land he had found is not a part of the East India islands but a new group of islands thousands of miles east of the islands he thought them to be. They are now called the West Indies to distinguish them from those islands nearer India which are now called the East India islands.

Columbus was right when he thought that India could be reached by travelling west, even though India is east of Europe. But he did not know that between India and Europe there is the large double continent of North and South America and the world's largest ocean, the Pacific Ocean. The world is almost twice as big as Columbus thought it was.

After the pupils have read this story the teacher should ask orally questions like the following. The pupils should write the answers.[1]

1. What kinds of goods did the people of Europe want from India ?...............(64)
2. Why did not ships travel from Europe to India via Suez in Columbus' day ?...............(26)
3. Why did not ships travel by the Cape of Good Hope route ?...............(25)
4. How did the people living on the shores of the Red Sea regard European travellers ?...............(26)
5. What shape did the majority of the people in Europe before Columbus' time believe the earth to be ?............(60)
6. How many people held the earth to be round? ....(42)
7. What was the usual route for travellers from Europe to India in those days ?...............(29)
8. In what direction did Columbus propose to sail in his search for a shorter way to India ?...............(23)
9. How many ships were given Columbus for the journey? ....(61)
10. What was the history of some of the sailors who were ordered to go with Columbus ?...............(14)
11. Did they make any stops on the way ? If so, where ? ....(9)
12. When the sailors did not see land for a long time, what did they fear would be their fate ?...............(26)
13. Name one or two things which Columbus saw that made him sure that land was not far off ?...............(53)
14. About how many days had they travelled without seeing land ?...............(39)
15. Why did Columbus call the inhabitants of the islands which are thousands of miles from India, Indians?........(19)
16. How large was the piece of land Columbus first found ? ....(20)

[1] The number in brackets after each question signifies the number of pupils, out of a total of 70 examined, who answered it rightly. It may interest the reader to see which facts impressed the pupils most.

17. What did Columbus bring to prove to the people of Spain that he had travelled to a strange country? ....(13)

18. What did the Indians first think the ships to be? ....(24)

19. Columbus never reached India. Was he wrong when he said, 'I can reach India which is to the east of us by sailing west'? ....(9)

20. Why did not Columbus reach India by sailing west? ....(10)

In order that the reader may see how readily new-type tests lend themselves for use in informal reading tests two other types on the same story are included.[1]

TRUE-FALSE TEST

Directions to pupils. Take a sheet of paper and write numbers on it in columns from 1 to 30. After this I will read 30 statements, some of which are true and some of which are false. When I read a true statement put a plus sign (+) beside the number of the statement. When I read a statement which you consider false put down a minus sign (−). If any part of the statement is false mark it false even if a part of the statement is true. Put down one sign or the other for every statement.

1. Trade between India and Europe in the days before Columbus was all seaborne.
2. What Europe wanted mostly from India in those days was gold, rice and cotton.
3. The way to India around the Cape of Good Hope had not yet been discovered.
4. There was scarcity of peppers and spices in Europe.
5. Europeans regarded travelling in the Red Sea as highly dangerous.
6. The Suez Canal was not dug until comparatively recently.
7. Most people in that day believed that the earth is flat.
8. No one in the Middle Ages believed that the earth is round.

[1] For further help in constructing or using such tests the reader is referred to *Suggestions for the Use of New-Type Tests in India.* 2nd ed.

9. Columbus believed he could reach the eastern countries by sailing west.
10. Because Columbus was an admiral he quickly secured ships.
11. Columbus was supported by his own king and queen.
12. The Queen of Spain gave Columbus three ships.
13. The Queen of England gave Columbus three ships.
14. Many volunteers immediately wanted to go with Columbus.
15. The crew of Columbus was made up partly of criminals.
16. Columbus stopped at the Canary Islands.
17. Men of the Royal Navy formed the crew for Columbus.
18. The crew was eager to sail to the end of the ocean.
19. There was a plan to throw Columbus into the sea.
20. A floating bamboo brought hope to the sailors.
21. The first land sighted was South America.
22. The first sign that land was near was a boatload of Indians sailing by.
23. Columbus was the first man to reach India by sailing west.
24. All the birds and trees Columbus found in the new land were different from those in his own country.
25. The islands Columbus discovered were in the West Indies.
26. Calling the inhabitants of the new country 'Indians' was due to a mistake.
27. Columbus never saw any part of America except islands.
28. India was in the direction Columbus thought it was but much farther than he thought.
29. The islands Columbus discovered were in the East Indies.
30. The people of Spain welcomed Columbus back as the discoverer of America.

In this test give one mark for every correct answer. Give minus one for every wrong answer. Thus if there were 25 right and 5 wrong the score would be 20 (25 minus 5) which is just two-thirds of the possible score of 30.

The next type of test illustrated is rather difficult to give orally. It should be cyclostyled if at all possible.

Multiple Choice Test

Directions. Underline the best answer.

1. The products for which merchants travelled from Europe to India in the days before Columbus were jewels, rice, cotton, silver, pepper and spices.

2. The route by which merchants usually travelled in those days was by way of the Suez Canal, by way of the Panama Canal, by way of the Cape of Good Hope, overland a large part of the way, through the Red Sea.

3. The Suez Canal was built about 65 years ago, shortly after Marco Polo came to India, when the English first came to India, shortly after the Red Sea was discovered, shortly after the Cape of Good Hope was discovered.

4. India is east of the place from which Columbus sailed. Columbus said, 'I will reach India by sailing east, west, around the edge of the world, all the way round the world, by sailing around America.'

5. Columbus never reached India because his idea of the shape of the earth was wrong, he sailed in the right direction but the earth is much bigger than he thought it was, he sailed in the wrong direction, he had not enough ships, he was afraid of falling off the earth.

6. Columbus was supplied with ships by Marco Polo, the merchants who wanted a short route to India, the Queen of Spain, a few learned men, the sailors.

7. Many of the sailors who went with Columbus were prisoners, merchants, learned men, kings, Indians.

8. The number of ships supplied to Columbus was 3, 1, 2, 10, 20.

9. In his search to find India Columbus sailed across the Indian Ocean, the Atlantic Ocean, the Pacific Ocean, the Arabian Sea, the Mediterranean Sea.

10. Columbus first felt sure he was getting near land because the water was not so deep, he could actually see the land, fires were burning round about, land plants were found floating in the water, they found Indians.

11. The time it took the ships to reach land after leaving the Canary Islands was 8 weeks, 37 days, 3 days and nights, a year, many years.

12. The land on which Columbus first set foot after crossing the ocean was a small island off the coast of America, South America, India, Spain, an island bigger than Ceylon.

13. Proof was furnished by Columbus to the Queen of Spain that a new land had been found by showing her the following things brought from the new land a bush with ripe berries on it, spices, birds with wings like sails, two men whom Columbus thought to be Indians.

14. The people of Spain rejoiced because a short way to India had been found, a new world had been found, the earth had been proved to be round, it had been proved there was no end of the earth, they were glad to see what Indians looked like.

15. Columbus made three more journeys. In these journeys he reached the East Indies, China, South America, India, North America.

Newspapers and magazines should be used extensively for reading exercises. They probably cannot be used in the way described in the preceding paragraphs because there will not be enough copies for each pupil to have one. If several copies are available at least one small group can work in the way described. If not, different pupils in rotation must be assigned a certain reading followed later by a discussion amongst all those who read it. Still better, the teacher can individualize his instruction. He can have consultations with pupils separately or in small groups over what has been read. But once in a while the entire class should be given a newspaper and magazine selection in a formal reading test so that there may be no doubt as to whether pupils can read such material effectively or not.

Also the discussion in open class of some articles is very necessary for the sharpening of the critical attitude. Many people have the naïve impression that what is printed must be true. There are very few falsehoods spoken or expressed orally that do not sooner or later find their way into print also. A necessary part of every citizen's education lies in disabusing him of the idea that what is printed must be

believed. Newspaper and magazine reading gives the best opportunity for critical and healthily sceptical appraisal. But books also have their share of misinformation and mis-emphasis and the school textbook, though usually quite conservatively written, is by no means to be considered free from the same defects.

X

BOOKS AND LIBRARIES

THE essential difference for our purpose between a book and a short story or article liesnot only inlength but in continuity of interest. In that sense many books are not to be considered books at all. Aesop's fables should of course all be gathered into one book for convenience sake, but since each fable is complete in itself and there is no continuity of interest carrying over from one fable to another, the collection lacks that quality which makes a reader want to go through to the end once he has started. Aesop's fables make a very poor reading book for school use not because they lack quality or profundity or charm but because after reading a dozen, one tires of the same fare and because one's interest is continually broken off abruptly and a new interest has to be developed for each story. The fables should by all means be in the school library but they are meant for browsing, a few at a time, and not for reading from cover to cover.

It has been found, even in Class I, that continuity in the selections used from day to day adds to the pupils' interest. Children are more eager to find out what happened to a little boy called Barkat or Mohan about whom they have been reading than to be introduced to entirely new friends in a new story, who have no connexion with their old friends. In literature for small children there is usually very little plot or relationship of material beyond the continuance of the same characters, but this slight continuity is very helpful.

As one comes into the higher classes there is even greater demand for continuity. Good readers of 12 and over not

only prefer books of connected interest but even entire series of related books. There are often great favourites, at least in the field of fiction.

The school reading texts in common use in India pay no attention at all to this psychological factor. They are a hodge-podge of this, that, and something else, and continuity of interest for ten pages is a rarity. Since in many schools this is the only book read, the attempt is made to have the material as varied and as instructive as possible. Certainly a large variety of literature should be read, but this variety cannot be provided in one or two books.

Actually, many students go right through middle and even high school without having had their curiosity and interest sustained throughout a book from cover to cover. The school books now in use are certainly not designed to promote such an experience. It may be preferable to have one textbook for intensive study containing a wide variety of subject-matter ; but there should also be provision for the reading of books with sustained interest, through the use of supplementary readers and library selections.

Many schools lack both supplementary readers and a library worth the name. This is a lack which simply must be overcome, whether by means of public subscription, library fees, or the regular expense account. No school building should be erected without the cost of a library having been considered before all available funds have been put into stone and mortar. A classroom, or desks, or even a member of the staff can be more easily dispensed with than a library. No teacher can be efficient without a good, though perhaps modest, library for collateral reading.

Building up an adequate library is complicated by the fact that although there is a wealth of good material available in English there is very little that is appropriate in Indian languages. Why is there so little? The desire to

teach English by making it the medium of instruction has hamstrung both the teaching of the mother-tongue and the creation of a good indigenous literature. Indian literature centres largely round a few classics, whereas all interests should be represented in literature. Most subjects worth reading about in English are also worth reading about in Indian languages and *vice versa*. It is extremely rare that a person learns a second language well enough to read with pleasure and profit in that language. The emphasis on English has had much to do with the small quantity of reading being done and with the dearth of modern literature in India's own languages. At last the growth of nationalism has demanded that the mother-tongue be given its due. With that should come a new day for the development of reading habits and literature.

There is no reason whatever why in the most-used languages a good literature should not be produced quite rapidly. Publishing presents no great difficulty. There are probably few countries in the world where books are published as cheaply as in India. For 6 or 12 annas a substantial book can be published and the size of even 3-anna books is not to be disdained. Almost any publisher in India is ready to print a book for which a sale of 2,000 copies can be guaranteed. Many books are printed in editions of 1,000 copies. There are more than 3,000 secondary schools using Hindi as the medium or one of the mediums of teaching. If each of these schools gave a standing order to a publisher to send even one copy of every book fit to be put into a secondary school library, the publisher would sell 3,000 copies before the book was placed on the open market. A publisher would be glad to print any book which the secondary school authorities would recommend for school libraries. In the Bengali, Urdu, Marathi, Tamil and Telugu areas the sales would be less but still sufficient to encourage publishers.

In other areas, perhaps, the outlook is not quite so hopeful, but elsewhere the publication of desirable books seems to depend largely on the organization of libraries to make use of books offered.

So much for the books that as yet are not. They will be forthcoming if teachers create a demand. What demand for the proper type of literature in the mother-tongue is there in secondary schools now? The use of a library has been discovered by very few secondary schools so far.

Instruction in the use of books will include much individualized instruction. Reading ability varies, and tastes and interests vary, not only in different individuals but in the same individual from time to time. There will probably not be enough copies of a book for everyone to read the same title at the same time. Even if the entire class did start together the pupils would not finish at the same time. One authority on teaching reading objects to two months being taken to read story material in class because the pupils who get interested will take the book home and finish it weeks before the rest of the class and for them thereafter, the obligatory classroom reading becomes a stale anticlimax. Those that do not finish the book by themselves evidently lack the proper interest to get much out of it and should be reading something entirely different and easier. This question will be further discussed in the chapter on individual differences.

All teachers of every subject must use the library continually. There should be regular assignments which require the use of both books and periodicals in the library. There should be special committee assignments to report on special problems. All assignments for work in the library, either central or class library, should be made with care, for the effectiveness of the reading programme in general

as well as the teacher's own subject in particular, depends on them to a large extent.

Of course each pupil should keep a record of his reading. He will not want to record all the reading of periodicals or all the regular assignment work, except as this forms a part of his notes on the subject taught, but he should keep a short record of his recreational reading for the sake of discussion with the librarian or teacher.

He should write a brief summary review of it setting forth the title, the author, number of pages, time taken to read it and an outline of its contents. He should write an opinion of the book, the part of the book he likes best and why. In reporting on a story the pupil must tell something worth while about the characters presented.

If some such procedure is not adopted, and if no one discusses the pupil's reading it is apt to be done in name only. The teacher or librarian must check whether the pupil really is understanding what he reads ; otherwise a distaste, rather than taste, for reading is being created.

Practical Suggestions

Frequent opportunity should be taken to discuss books among groups of pupils. One pupil easily infects the other. A report by one pupil that a certain book is interesting usually creates a demand for it. A good teacher will be alert to find out which books appeal to students.

Children must be trained in the proper care of books, the use of the library, the use of the index at the back of the book,[1] its table of contents, etc. They must learn how to use a dictionary and encyclopædia and know what preface and introduction are, what usually goes into an appendix, and so on. There are also numerous points which arise in connexion with technical reading.

A parting word on the kind of book that is most read.

[1] See end of chapter

There are some people who read almost nothing but fiction. From this the impression has grown up that for a book to be interesting it must be fiction. The best-sellers are by no means all fiction. Books of opinion and facts are greater favourites among good readers than fiction, in recreation time as well as in work time. A teacher should grade his pupils to read books of various types on a wide variety of themes.

Books behind locked almirah doors are as useful as a carpenter in a grave. Librarians are of course worried about books taken out with no record left, stolen books, etc., but a system must be evolved whereby students have ready access, or the books and papers of the library are useless.

There will be books of special interest to classes at certain times. The teacher of each subject will see that the books he likes to expose are attractively displayed in his classroom, taken out of the central library for the time being and made part of a class library. If there is a history room, a science room, a drawing room, this will be the logical place for a subject library.

A Test in the Use of an Index [1]

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[1] From *The Indian Year Book and Who's Who* 1943–4, pp. 1347–8 (The Times of India Press, Bombay).

A TEST IN THE USE OF AN INDEX—(CONT.)

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Engineers, Institution of 397
English Education, Growth and Organization of 350
European Association (and Branches) 394
European British Subjects and Criminal Law 428
European Education, Anglo-Indian and 359
Evangelic Mission, Basel 425

1. On what page will you look if you want to find out how much money was spent on (*i*) education, (*ii*) on the army? ....

2. If you want to find out how many people died of cholera what page will you look on?.....................

3. Is there anything in the book about medicines? On what page?.....................

4. Where will you find information about sending letters by aeroplane?.....................

5. Where will you find information about (*i*) milk and butter products?.....................(*ii*) Colouring matter for colouring clothes?.....................(*iii*) Laws concerning women working in mines?.....................

6. Judging only by what the index tells you, would you expect to find information on the following? (Answer Yes or No.)

Emigration to South Africa.....................
Engineering schools.....................
Wages of women mine-workers.....................
Locally manufactured drugs.....................
Indian States in the Deccan.....................
Awards of medals and honours.....................
Extension of electrical facilities for factories ....
Women's education.....................
Tea manufacture.....................

XI

READING AND STUDY

THERE have been numerous suggestions in the last five chapters on 'how to study'. Much of the material in the chapter on Paragraphs and Longer Passages could be transferred into a chapter on 'how to study'. Picking out 'topic sentences', outlining, distinguishing between major and minor points, and summarizing—these are as definitely study activities as reading activities. Indeed, they are more so for they deal with intensive reading, which is study of a literary nature, whereas reading has also its recreational side which contrasts very vividly with study. The purpose of this chapter is not to introduce any new material but to reconsider from a somewhat different angle the ideas already presented.

Since it is of such great value to both student and teacher, a short summary[1] of how to study books will now be given, even at the risk of repetition.

1. *Keep the purpose of the reading in mind as you read.* See how the points fit in with the main purpose and support it.

2. *Be sure that you have the main thought of each paragraph.* Stop at the end of each paragraph or division of the subject and recall in your own words the central thought of that section.

3. *Use judgement in the time you give the different points in your reading. Vary the rate of your reading.* Read the important and difficult points slowly, making sure you understand them. Read the familiar points rapidly. Skip over the points that have no significance for your present purpose. The secret of study is to seize upon the important and the difficult parts and concentrate upon them.

[1]This summary (greatly shortened) is taken from Arthur A. Kornhauser's book entitled *How to Study*. Published by the Chicago University Press. The Selection is condensed from Chapter VI.

4. *Think critically in your reading. Draw your own conclusions. Go beyond the book.* Spend a large part of your study time thinking over the material you read rather than merely memorizing the points. Too many students accept blindly as truth whatever they see on a printed page. A safer attitude is one that carefully weighs and considers the facts, opinions, and theories that are read.

5. *Record the main thought of your reading.* Mark the important points in the readings as you come to them (only when it is your own book, of course).

6. *Make a mental (or written) outline of the material as you read; then review the entire reading with this outline in mind.* The thoughts of the different sections must be interrelated. Organize the material into main points and subordinate points.

7. *For most thorough mastery of reading assignments, organize your notes under major questions, and do your reviewing by repeatedly testing yourself on these questions.* This method of 'self-recitation', properly used, can contribute immensely to the efficiency of your study periods.

There has been considerable confusion in the promotion of reading and study activities. It has been said 'reading is study'. Sometimes it is, but not always. The same book may be both *read* and *studied*, these being two quite different activities. I have often decided that some book which I read (but by no means studied) purely for pleasure was worth careful study and have gone over it much more carefully a second or even a third time because I really wanted to familiarize myself thoroughly with its contents. Likewise literature that has been carefully studied can later be read with great enjoyment just for the sake of appreciation. This is a quite different attitude from the one used in study.

Although reading and study of thought-provoking literature have much in common, it is very necessary to distinguish clearly between the two, especially in the teaching of reading at the middle and high school level. Most prescribed reading books are designed for careful study

rather than cursory reading. There is also a place for books that should merely be read but are hardly worth careful study. This kind of reading also needs to be taught.

We may assume that what needs to be studied is always somewhat harder than what is intended for recreational reading or it would not need to be studied. More of the contents need to be remembered in *study* than *in reading*, and trying to remember detail is always painful. The purpose of study is work or utility whereas in reading, although it may be utility, it may also be purely for reasons of pleasure. Newspaper reading is certainly far different from study. In reading one goes ahead faster than in thorough 'study' reading.

Studying is not conducive to the development of proper eye-movements. Either there is too much going back to recheck facts and arguments or there is too much skimming to find out facts for the development of rhythmical eye-movements which are associated with the recreative and appreciative moods. Proper eye-habits should first be well established before much intensive studying is done. In Indian schools reading is apt to be mostly of the study type and not sufficiently of the recreational type.

Therefore lighter literature (including newspapers), which is to be read once and once only, is much needed. Both rapid reading and studious reading should be practised. The middle school age is the time in which a great deal of rapid reading should be done so that efficient reading habits may be established firmly before the time of greater reflection and really serious study sets in. Lacking this reading skill studious reading will be much slower and more laborious than it need be.

In this connexion it would be well to look again over the reading programme in some foreign schools mentioned in Chapter I and again in Chapter XV. There the emphasis

is on much reading of a fairly light nature; if not fiction or connected with a hobby, still of high entertainment value. Careful analytical reading belongs to the later high school and college level when the pupil is psychologically ready for it.

Once more we must deplore the fact that there is such a dearth of lighter reading material adapted to the needs of young people (and even adults for that matter) in the Indian languages. There is literature for mature minds but little for minds in a formative state. Literature in another language than the mother-tongue can never supply this need. However there would be more appropriate literature if the little that exists were used more.

XII

SKIMMING

All facts in books, magazines, and newspapers are not of equal value. Not only are some facts of less intrinsic value but their value varies with different people because of differences in taste. Even to the same person facts are of varying interest and usefulness from day to day. No one can be interested in all facts at the same time. We must be able, when trying to find out something about a particular problem, to leave all other things more or less alone for the time being. Otherwise our interest is scattered by the mere accident of what we happen to run into while reading. Without the ability to sift relevant from irrelevant facts while reading we should all be forced to drag a huge weight of information in our minds while trying to find out something relatively simple. Clarence Stone says:

> Is it ever advisable to skip in reading? Shall we teach pupils when and how to skim in reading? We hear a great deal about thoroughness in school work. It is well that this should be emphasized under some conditions. But there is a serious question as to whether over-emphasis upon it has not tended to hinder desirable growth in rate of reading. There are various types of silent reading, varying according to the purpose of the reader. We have the careful reading in study and the rapid, recreative reading. Skimming is a type of reading that is legitimate for certain purposes. We may glance over the pages of the newspaper, noting the headings in order to select what we shall read, to find a certain fact, or to determine if there is anything in the paper about a certain matter. We may look through an article or book, reading a little here and there to get the gist of the book or to determine whether we care to read it or not.
>
> The school should train pupils in all these types of skimming; but care should be taken that pupils do not form the

habit of skimming as a general practice in their reading. When an exercise in skimming is for the purpose of training the pupil to read much more rapidly, for a certain purpose, there should be a definite check upon how he comprehends in line with that purpose. Otherwise skimming will tend to decrease his comprehension in his ordinary reading.[1]

Some people in reading the newspaper have to read an entire article through before they find out whether there is anything they really wanted to read in it. Sometimes they pay little or no attention to the headlines which indicate the contents. A newspaper is printed to satisfy many readers with diverse interests. No one is, or should be, interested in everything it contains. A poor reader who cannot tell at a glance whether he wants to read a certain part of the paper will lose all interest in it because he finds so many uninteresting deserts between the oases.

How can skimming be taught? There are two skills involved in it: (*i*) good speed in reading; (*ii*) ability to skip and pick out the most essential points. When skimming to get an outline or summary of a passage or book the reader must be able to pick out the sentences or phrases that express the central thoughts. If one is skimming to get an answer to certain specific questions the eye must be 'set' to ignore everything not relevant to the answers. It is said that a student writing a thesis on the properties of zinc and bismuth had to search a whole chemical library for his references. After a while he could, by a mere glance at a page, tell whether either of these two words was on the page. They seemed to stand out and force themselves on his attention. With a little training it is possible to tell very quickly whether a certain page deals with a certain subject.

The preparation for teaching skimming should be laid in the middle school. The habit may not be fully developed until much later, but it is remarkable how quickly children

[1] Stone, op. cit., p. 170–1.

can tell whether books and articles are likely to contain something to interest them.

Training in skimming begins with training for rapid reading, for which suggestions have been given in Chapter III. Stone's warning should be borne in mind: not all pupils will respond well to such training and it can easily be overdone. The distinction between regular rapid reading and skimming comes at the point where the reader decides he is not interested in an entire passage but only in certain parts or an outline of it. A more difficult type of skimming consists of training to make a rapid survey. Training for the seeking of answers to specific questions is a procedure involving practice of that sort of skimming.

Training readers to make a rapid survey or outline is a gradual process. Exercise in locating the 'topic sentence' of each paragraph is a requisite preliminary (see Chapter VII) and so is outlining. Only after much practice in these basic processes can the more rapid processes be begun.

Good preparation for making mental headings as one reads may begin with reading material in which the headings are printed. Newspaper and magazine articles have headings and so have many school textbooks. Yet often these headings are not properly used. Good indexes encourage the selective process in reading and give practice in the use of headings as an aid in the development of organizational ability. A teacher can present paragraph headings and ask the pupils to select the paragraph in the chapter to which the heading is appropriate. The making of an index is excellent practice. In short, anything which aids the organization of the reading matter is good preliminary practice for skimming or the comprehension of longer passages. When need for organization is combined with time-urgency we have the condition under which skimming can best develop provided the pupil has the requisite

mechanical skill and native ability. Students with a low intelligence quotient are rarely able to learn skimming although intelligent pupils can learn it quite early in life.

There should be frequent re-reading of material, for the sake of filling detail into the mental or written outline. By this we do not mean that a lesson is assigned again or that readings done in previous periods are 'revised'. That kind of reading is exceedingly tedious. We refer to motivated re-reading which takes place immediately after the outline is made, or during the time the topic is still under discussion and reference back to it is desired for reasons of amplification, enlargement or revision. A rather popular exercise in the teaching of skimming is to have pupils go through an article very quickly and make a short outline. They are then asked to go through the article more carefully and verify the accuracy of the outline. This gives practice in skimming and provides a check which shows the pupils how well they are succeeding.

Material used for skimming should be easy, that is easy for the individual reader. It may be hard for another reader but for the reader who does the skimming it should be easy and the subject-matter fairly familiar. One cannot skim through material on a new subject. Only when one is sufficiently acquainted with a subject to dispense with much of the supporting detail is it wise to try to skim. Skimming requires of the reader mastery of the subject-matter and an orderly advance idea of the subject in hand.

The reason for putting so much emphasis on skimming is not merely in order to save time in a reading assignment but because of its immense utility as an aid to study and selection. A student can get at facts in any subject much more readily when he knows how to skim. It is almost a prerequisite for acquiring independent habits of study, as opposed to slavish dependence on one or two textbooks, and for getting real value out of the library.

XIII

TECHNICAL READING

CHAPTER VII contains some simple exercises on 'following directions' which provide excellent preparation for the reading of certain kinds of technical material. Much technical material is actually 'following directions' as can be shown by glancing into books on engineering, surgery, agriculture, etc. Not only engineers and surgeons, however, require to read literature of this type. Every book on home nursing, hygiene, mechanics, practical agriculture, cattle raising, and so on, contains material of this sort. Anyone who buys a Petromax lantern needs to read the instructions that come with it which are by no means so easy to read and understand that every high school pupil can dismantle a Petromax lantern and put it together again. All sorts of directions on how to use certain products must be read by the handy person. All sorts of forms from income-tax to money-order forms must be filled out by a literate person at some time or other. Ability to do this does not come of itself but only through practice. Some people of more aggressive spirit learn such things readily on their own initiative. But there are many less adventurous pupils in the school who will be seriously handicapped if training in the filling of forms and the following of directions is not given.

The science laboratory provides constant need for ability to follow directions. Training in working out experiments from printed assignments rather than from oral directions is not only useful in the laboratory but throughout life. The man who reads the directions on the care of his motor-car or plough is reading essentially the same type of material

as he is called upon to read in the laboratory while doing experiments. Many teachers, however, neglect opportunities of making their pupils follow complex written directions.

Technical reading, in addition to familiarity with the special vocabulary and concepts of each technical subject, requires this ability to follow instructions and the ability to interpret charts, tables and formulæ. Often the most important facts in a chapter or article are contained in a chart, or formula. Many readers ignore them unintelligently because they lack the skill to visualize from the data the important information contained therein. Tables of data contain very concise information which, as a rule, can be visualized much better than an involved prose description. The reader must know, of course, how to get the information he wants so there must, therefore, be training in the hunting of facts from concise compilations of data. Neglect of this training often makes an entire subject a closed book.

We may assume that some work of this type is given in every well-taught school. There will be few schools however where it is given in sufficient quantities. At all events, suggestions for improving technical reading, as well as ordinary reading, are needed and are given here for what they may be worth to individual teachers.

The rest of this chapter consists of examples of a few types of practice work that should be given. Both the 'following directions' type of work (which in many cases is practically the same as a printed assignment) and the use of concise fact-giving devices are illustrated.

Directions for Science Experiments

To show that unhoed soil loses more water than hoed soil. Remove the tops of two large-sized tins, punch a hole in the bottom of each, and push a piece of cloth through. Fill each tin with soil and rest it on a bottle full of water into

which the cloth dips. Place equal amounts of water in each jar and keep the surface of the soil in one tin disturbed. Note the difference in the amounts of water left in each jar after a week.[1]

A Geography Assignment

(An outline map of India is supplied or the pupil is first instructed to draw or trace the map of India and Burma in outline. Directions may be written on the blackboard or given on a cyclostyled sheet.)

1. Insert Chilka Lake.
2. Show the Narbada River with a line.
3. Draw the two railway-lines between Bombay and Calcutta using lines like this.
4. Mark the city where the Viceroy used to spend the hot season.
5. Put a star to show the city in which Jawaharlal Nehru lives.
6. Put a K. P. at the place where the Khyber Pass is.
7. Put a C where a well-known coal mine is situated and an I where there is a very famous iron foundry.
8. Draw in the Annamalai Hills.
9. Write 'Taj' where the Taj Mahal is located.
10. Outline, with a thin pencil line, the area in which Marathi is the most common language spoken or is almost as commonly spoken as the most used language of that area.
11. Draw a ship at the port through which most of the trade with Europe comes into India.
12. Put two stars in that country which was one of the provinces of India a few years ago but has now been separated from the Government of India.

Mathematics Assignment[2]

The Points of the Compass. Draw a right angle with your paper set-square. This angle contains 90°. A circle contains 360° (Figure 7). With your set-square, draw four right angles like those in the circle. Draw each line 3/4″ long from the centre. Place your drawing

[1] A. J. Carpenter, *A West African Nature Study*, p. 316 (Longmans, Green & Co., N.Y.)

[2] J. O. Westworth, *Groundwork in Arithmetic*, Book III, p. 59 (McDougall's Educational Co. Ltd.)

so that these four lines show the directions North (N), South (S), East (E), West (W) (Figure 8). If you are going towards North or South, and you wish to go East or West, you must pass through 90°. Now fold your set-square so as to divide the right angle into two equal angles.

What is the size of each new angle?

With this angle draw the other four lines running to NE., SE., SW., NW. (Figure 8).

How many angles, each of 45°, have you made?

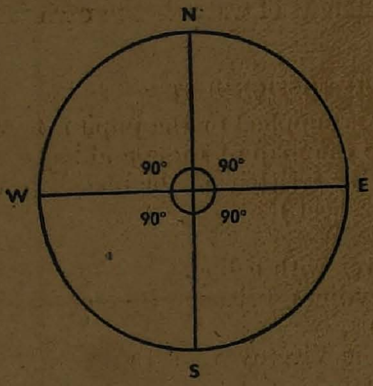


FIG. 7

Then 8 times 45° = 4 times 90° = 360°.

A. 1. In Figure 8, North is shown at the top and South at the foot of the drawing. East is therefore on the right of the drawing and West on the left.

2. You will notice also that the points of the compass with the word:

(*a*) North in them (such as North-east) are above the line W-E.

(*b*) South in them (such as South-west) are below the line W-E.

(*c*) East in them (such as South-east) are right of the line N-S.

(*d*) West in them (such as North-west) are left of the line N-S.

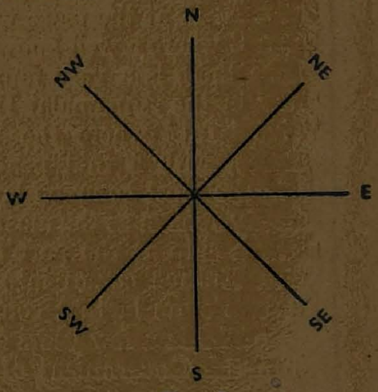
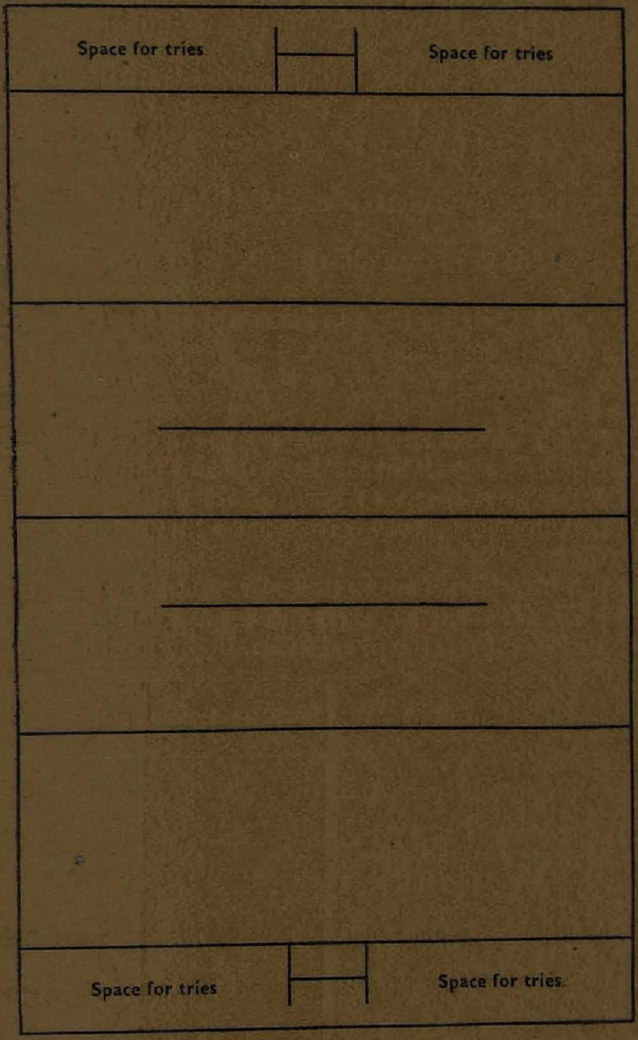


FIG. 8

B. 1. A man walks 6 miles to the North, then 4 miles to the East, and lastly 2 miles South. Draw a plan of his walk, scale ½″ to 1 mile.

ASSIGNMENT OF SCALE[1]



Scale: 1″ = 25 yds.

2. Fred, Tom, Sam, and Jim Brown are in a large field. Fred is teaching Sam and Jim the points of the

[1] Westworth, op. cit., pp. 12, 13.

compass. He sets them all to walk from the same starting point in several directions.

(*a*) Fred walks 5 chains East, and then 3 chains South.

(*b*) Tom walks 5 chains West, and then 3 chains South.

(*c*) Sam walks 4 chains North, and then 5 chains West.

(*d*) Jim walks 6 chains South, and then 5 chains East.

Draw plans of the four walks (scale, ½″ to a chain) and find out

(*e*) how far Sam is from Tom; (*f*) Tom is from Fred; (*g*) Fred is from Jim.

A. 1. Look at the plan of the Rugby football ground (page 131).

2. (*a*) What is the scale? (*b*) What does this mean?

3. What does a line 2″ long on the plan stand for?

4. Draw a line to represent 80 yards.

5. What length of line drawn to this scale stands for 70 yards?

6. Draw lines to this scale to stand for: (*a*) 65, (*b*) 70, (*c*) 75, (*d*) 80, (*e*) 85, (*f*) 90, (*g*) 95 yards.

B. Find out from the plan of the Rugby football ground:

Measurement	Inches on plan	Actual distance
1. The distance between the goals ..		
2. The total length of the ground counting in the spaces behind the goal posts ..		
3. The distance behind each goal post ..		
4. The total width of the ground ..		
5. The distance from the goal posts to the first line across the field ..		
6. The distance from the centre line to the short lines above and below.		

Measurement	Inches on plan	Actual distance
7. The length of these short lines ..		
8. The distance from the centre line to each goal.		
9. The distance from the centre line to either of the far ends ..		

C. 1. Draw another plan of the football ground to the scale of 1 in. = 10 yds. or ½ in. = 5 yds. or ¼ in. = 2½ yds.

2. Draw still another plan of the ground, scale 1 in. = 5 yds.

D. 1. A boy walked around the edge of the football field 5 times. How many yards did he walk?

2. Suppose the boy walked round 44 times, how many chains (22 yards = 1 chain) would he walk?

Test in Reading on Rural Industries

Formula for Coconut Oil Soap.[1]

3 parts by weight of water
5 parts by weight of coconut oil
1 part by weight of caustic soda

Put the water into a basin and add the caustic soda. The water will become hot. Stir slowly until all the caustic soda is dissolved, then allow it to cool for about fifteen minutes. Caustic soda by itself or dissolved in water is very injurious to the skin, so it must be handled with great care. When the solution has cooled it should be poured *slowly* into the oil, stirring all the time. In cold weather the oil may be warmed a little. Keep on stirring until the mixture becomes rather thick, like honey. It should then be poured into a basin or a flat pan to set. After twenty-four hours the soap can be cut into squares with a knife. Coconut oil gives a pure white soap. In some respects it is superior to soap made from other oils because it lathers freely and 'wears' well.

[1] I. W. Moomaw, *Education and Village Improvement*, p. 55 2nd imp. (Oxford University Press).

TEST IN THE READING OF STATISTICS[1]

COUNTRY	Area in Square Miles	Population	Miles of railroad	Number of telephones	Number of motor-cars	Coal production in tons	Pig-iron production in tons	Oil production in barrels	Gross tonnage of steam and motor ships (1929)
Argentina ..	1,153,119	10,646,814	23,548	245,294	364,737	—	—	8,800,000	274,700
Australia ..	2,974,581	6,373,219	26,739	476,700	581,310	—	—	—	—
Brazil ..	3,285,318	39,103,856	19,796	129,829	194,000	400,000	—	—	545,695
Canada ..	3,684,723	9,786,800	55,455	1,334,534	1,168,188	17,564,293	—	624,184	—
Chile ..	290,119	4,364,395	5,246	55,545	32,996	1,482,605	—	—	157,357
China ..	4,279,170	451,842,000	9,370	50,000	35,489	16,000,000	—	—	314,638
Egypt ..	383,000	14,213,364	3,126	41,927	27,675	—	—	1,866,000	28,920
France ..	212,659	41,020,000	25,947	965,519	1,296,167	60,886,000	10,290,000	—	3,302,684
Germany ..	181,723	63,178,619	36,255	2,950,430	642,500	180,158,000	13,300,000	—	4,657,651
Great Britain	89,041	44,504,000	20,386	1,754,641	1,452,489	291,908,000	7,565,000	279	22,117,246
India (British)	10,943,000	247,003,293	40,950	53,685	153,111	24,802,000	1,350,000	8,470,000	—
Italy ..	119,710	41,168,000	12,442	292,867	241,463	—	—	—	3,215,327
Japan ..	145,024	62,938,200	12,590	811,319	92,883	39,683,000	1,500,000	509,000 } 2,010,000 }	4,186,652
Mexico ..	767,198	14,899,905	18,862	77,971	74,300	1,015,830	—	44,689,000	48,043
Netherlands ..	12,603	7,730,577	2,278	255,489	100,537	10,694,215	—	—	2,902,420
Norway ..	125,086	2,810,592	2,383	181,962	41,837	—	—	—	3,217,795
Persia ..	628,000	10,000,000	231	3,713	8,327	—	—	45,250,000	—
Rumania ..	122,282	17,393,149	8,744	58,398	35,982	2,636,202	70,123	34,930,000	69,521
Russia ..	8,241,921	154,300,000	48,023	300,000	24,000	37,901,000	4,000,000	103,000,000	437,109
Sweden ..	173,156	6,105,190	10,378	466,787	109,522	358,513	500,000	—	1,480,189
United States	3,026,789	122,775,046	262,713	18,200,000	23,262,183	608,983,000	42,400,000	1,006,000,000	13,591,803

[1] Harold Rugg, *Changing Civilizations in the Modern World*, pp. 614–15 (Ginn & Co., Boston)

What precaution against personal injury should be taken while making soap?

If the oil is too thick to pour properly, what should be done?

If 5 seers of caustic soda is used, how much water is needed?..................How much coconut oil?..................

When mixing the caustic solution what should be done?

What are the special advantanges of coconut soap?

How can you tell when the mixture has been stirred enough?

1. Which country produces the most coal?

2. Which country in Europe produces most coal?

3. Would you expect Brazil to send coal to the United States?

4. What is the most important product listed for Mexico?

5. Name three countries that have enough coal and iron to be in a position to manufacture iron products without having to import.

6. Which country is the most modern in respect of mechanical conveniences?

7. Name three countries that, judging from the statistics given, must be very sparsely populated.

8. Which is the largest country listed?

9. Russia is the second greatest producer of oil out of which petrol is made. Does Russia use much of this for motor cars?

10. What country has nearly half the telephones of the world?

11. Canada has more than four times as many miles of railroads as Japan. But which country of the two is better supplied according to its size?

12. Great Britain has more shipping than the six countries in continental Europe having the largest amount of shipping. Which countries are they?

13. Name a country in Asia that had almost no railroads when these statistics were gathered.

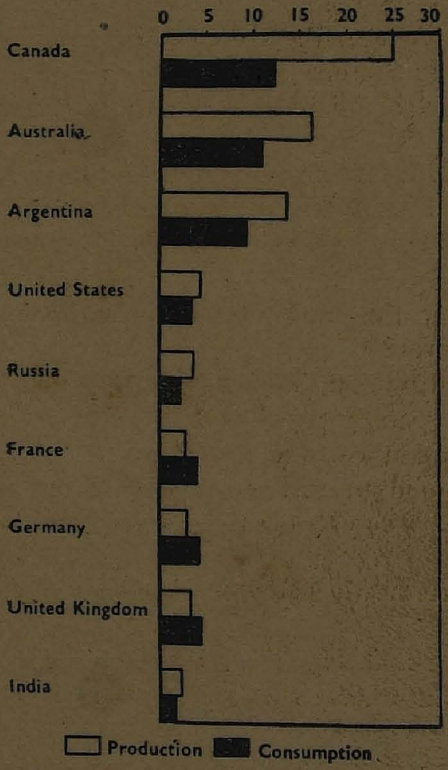
14. Which is more heavily populated, Germany or France?

15. For what raw materials is Italy almost wholly dependent on imports?

16. Which country is best situated for seaborne trade?

Graphic Statistics

There are literally hundreds of forms of graphic representation of statistical data. If taught how to use a dozen or so of the most common types, an intelligent person should be equipped to unravel the information of most types if they are not too technical.



Production and consumption of wheat per person per year (in hundreds of lb.) in the important wheat-growing countries of the world[1]

1. Which three countries eat most wheat *per capita*?

2. Which country depends most on selling wheat to other countries?

3. Which country is most dependent on other countries for wheat?

4. Which countries use practically all they raise and raise practically all they use?

5. Which country must obviously depend more on other grains than on wheat?

[1] Rugg, op. cit., p. 564.

6. Assuming that Canada's population is twice as large as Australia's, about how many times as much wheat has Canada to sell every year than Australia?

7. Australia has a population of about 60,00,000. Approximately how many hundreds of pounds of wheat has Australia to sell to other countries each year?

8. About how many more pounds of wheat per year does a Canadian eat than

(*a*) a Frenchman..................
(*b*) a German........................
(*c*) an Indian........................
(*d*) a Russian........................?

XIV

INDIVIDUAL DIFFERENCES AND THE NEED OF STANDARDS

How strongly people differ from each other in mental potentialities was not realized until the beginning of the twentieth century; in fact it is still hardly realized by the average well-educated person. Learning power varies as much as earning power.

For example, we usually think that all pupils in Class VI of a certain school are of about the same mental accomplishment. Nothing could be further from the truth. In the same classroom under the same teacher, two pupils are reading a classic. One catches its rhythm and spirit; his eyes glow as he reads and he is being thoroughly saturated with its cultural values. The other boy also reads and can pass the ordinary examination on it but it has not set him on fire and appears to him as a dull but necessary discipline that he must undergo. The difference between the boys may be one of interest or effort, but it is likely to be a difference of imagination and abilities: one boy has what the other lacks and cannot get no matter how hard he works. Or the two boys may be learning arithmetic. One learns to do the set problems but when school is over mathematics fades out of his mind. The other boy may not get a much higher rating in mathematics but he thinks mathematically in and out of school.

In the ability to read, an even greater difference is discernible. All pupils of Class VIII know how to read. Some of them read magazines, newspapers, novels, scientific articles, in fact almost anything they can get hold of that interests boys, and some things that are distinctly on the

adult level. Others read only what is required by the teacher and consider that a burden. Others may read a little material of a flimsy nature, especially if it is illustrated, but reading adds little to their mental exercise. In the same class, some pupils are reading ten times as much as the average pupil while some never read for pleasure. We may be sure that these pupils are growing away from each other intellectually at a far faster rate than school marks give any indication of. Some pupils in Class VIII are thinking on the high school, perhaps even college level; others may manage to pass but in their private thinking (which is what really counts) they are hardly in advance of pupils just coming out of Class IV. The class in which a pupil reads is only a very poor indication of his mental growth.

Let us see by actual measurement how greatly children in the same class differ from each other in reading ability. To show this I am using data from my Standardized Reading Test for Middle Schools in Hindi which has been given to nearly 4,000 pupils in the C.P., the U.P., and in Bihar. The data were accumulated from nearly 2,000 pupils. The test was also given in Class IV, one class lower than middle school. For the data for paragraph reading, see page 140.

Since the material in this test is by no means of uniform difficulty but increases in difficulty gradually, it means that a pupil with a good score not only gets a better score when reading material of the same difficulty as the pupil who gets a low score but that he has to read much more difficult material once he gets beyond the place where the poor reader stopped. His accomplishment is greater not only in the quantity read but in the standard of difficulty.

Note the wide variation in reading ability in Class IV. The very best pupils of this class are equal to the average pupil in Class VIII. The best quartile in Class V is better

than the average in Class VII. Again, the best 10 pupils in Class IV have a score seven times as great as the average score of the poorest 10 pupils in the same class. The second quartile doubles the score of the third quartile. The range is all the way from nearly complete failure to nearly adult level.

TABLE X

No. of points scored	No. of Pupils Making Various Scores in each Class				
	Class IV	Class V	Class VI	Class VII	Class VIII
1–2	1	3	..	1	..
3–4	3	5	1	..	..
5–6	7	9	1	..	..
7–8	5	4	..	..	..
9–10	12	8	1	..	1
11–12	11	18	4	..	4
13–14	16	19	4	2	2
15–16	19	23	1	5	..
17–18	18	24	10	4	1
19–20	23	28	14	7	7
21–22	12	30	16	7	6
23–24	16	34	11	11	3
25–26	15	32	30	8	8
27–28	15	40	26	15	12
29–30	10	33	34	21	15
31–32	5	35	36	29	14
33–34	5	21	23	20	22
35–36	3	21	27	26	28
37–38	4	22	30	29	30
39–40	2	17	24	39	26
41–42	2	15	20	35	38
43–44	3	5	17	37	32
45–46	1	2	7	21	25
47–48	..	1	4	16	25
49–50	..	..	1	6	14
Average score	21·5	26	32	36·5	38

In the test on page 105, 5 pupils out of 70 answered more than 90 per cent of the questions correctly, a really remarkable feat. But 13 answered less than 25 per cent

of the questions correctly. Here in the same class we find readers whose ability would do credit to an educated adult and we have readers who have hardly noticed what the story is about.

What is it that causes this great difference? It is not by any means all, or nearly all, due to the teaching, though that is very important. Much of the difference is traceable to differences in the industry and effort of pupils; but much of it is due to native intelligence. What is the difference between the type of reading an intelligent and a mentally handicapped person does? In his exceedingly interesting book, *Characteristic Differences in Bright and Dull Pupils*, Harry Baker gives the results of some very painstaking investigations which he worked out with the help of 500 teachers in the Detroit public schools. Intelligence tests had been given to some thousands of pupils as a matter of routine, so their intelligence was known approximately. He then, without communicating to the teacher the result of the intelligence test, asked the teacher to describe in detail the learning characteristic of certain children in the various school subjects and activities. The children selected were either outstandingly bright or outstandingly dull but Baker did not divulge to the teachers the category to which the pupils were considered to belong. From these descriptions the contrast in the characteristics of bright and dull pupils could be generalized with reliability. These are some of the characteristics listed.[1]

Dull pupils are inclined to be more interested in the mechanics or oral reading than in reading for comprehension. Encouraging dull children to think is a very great problem. These considerations suggest the importance of a proper motive for reading at its earliest stages, before dull pupils get the habit of word-calling established. Modern reading

[1] Baker, op. cit., pp. 44, 46.

methods have been devised with the major objective of stimulating reading for comprehension. In carrying out this worthy aim, so many physical and manipulative elements have been added to reading that dull pupils find reading too complicated for mastery. They often become completely absorbed in the process itself.

When they are allowed to make free choice of reading material, dull pupils re-read simple stories, whereas bright pupils prefer to exert themselves on new and unfamiliar material.

Bright pupils have a natural interest in reading. They read for comprehension. The mechanics of reading seldom become the centre of attraction. The mechanics are mastered because control of these elements is recognized as a means to a purposeful end.

They seem to learn reading by any method that may be devised, or rather they seem to learn *in spite of* the method. Methods that have appeared to be effective for them have, accordingly, often been mistaken as a sure means of getting efficient results with any type of pupil. The application of such methods to dull pupils has often proved extremely disastrous. Then the pupils, rather than the method, have been blamed.

Bright pupils get control of enough words to read independently at a very early age. They have already had many experiences and are capable of applying the new avenues of expression to the familiar situations. When new words are found, they are able to determine their meanings quite accurately from the context and are not at a loss how to proceed.

The difference is seen very clearly in the type of library work both categories of children do. *Dull pupils* appear to be busier in a library than they are. They play around with books rather than read them. They are attracted more by

pictures, colour, and size of books, etc., than by contents. They are poor in reference work, usually wasting their time on unimportant details because they do not realize what is really important.

Bright pupils on the other hand go about their work quietly and really enjoy the library period. They have a natural way of knowing how to select the books which are most apt to give them what they want. They show originality in finding some other book that will serve their purpose nearly as well if a particular book they were referred to does not happen to be in the library at the time. They can quickly give a summary of what they have been reading and quickly recognize the important facts.

Baker does not mention how many pupils were considered bright and how many dull; possibly about 20 per cent in each category. The characteristics of the normal pupil are not given, but are assumed to be somewhere between the two, showing a definite relation to both.

There are some things the dull pupil simply cannot be taught no matter what effort is put forth. And there are some pupils who teach themselves no matter how good or bad their teacher is. Intelligence determines future progress to a considerable extent.

A teacher should not assume that any pupil showing the characteristics of the dull pupil is necessarily dull. The normal pupil will show symptoms of both types and not even the dull and bright always run true to type in any one subject. Not unless a pupil shows the same characteristic mechanical approach in other subjects and activities in and out of the school should he be assumed to be dull. Some bright or average pupils have a great deal of difficulty in reading as will be shown in the chapter on reading difficulties. Poor teaching methods in the lower classes can inculcate wrong habits and attitudes in reading that remain

a handicap for a long time. Many poor readers in every class can benefit tremendously from individual attention from a good teacher. But that is the subject of the last chapter.

In giving standardized tests both in primary and secondary schools, I have found that there is a decided difference in the ability of the class as a whole in some of the schools. In some schools an average score of as much as three times that in other schools was obtained. In one or two cases schools having a large number of Scheduled Caste children did better than scholarship-holders in other schools. Such differences as these are not due to the difference of intelligence of the pupils but to the teaching. In some schools the average intelligence of pupils is higher and more should be expected of these classes.

In nearly every class there is a small residue of children who cannot be taught to read intelligently no matter what is done for them, but their number is small. In India it should probably not be more than 5 per cent, for the dullest pupils are eliminated from school through competition which is not the case in countries where education is compulsory. The teacher should recognize that all pupils cannot be brought up to a uniform level of ability. Nature endows us too unevenly to permit that. But it is a rare school in India where proper attention could not improve the ability of nearly every pupil in the class from 25 to 100 per cent in a few months.

Although all the pupils of each and any class cannot be brought to the same level, it is advisable for a teacher to have a fairly clear idea of approximately what is to be expected of the average pupil of each class. In other words, there should be some idea of the standard which the average attainment of the class should equal. Unfortunately no such standards are available in India backed by experience and born out of a background of improved teaching of

reading. What measurement of reading has been done all concerns oral reading, with no indication whatever of such important details as difficulty, standardized procedures and evaluations, or even as to whether the tests employed new or familiar matter.

In the absence of such standards I may be excused for quoting standards and requirements from the Missouri Courses of Study.[1]

TABLE

SILENT READING STANDARDS

GRADE	Rate in words per minute	Comprehension
I	85	50% of the ideas of a 100-word passage
II	100	50% of the ideas of a 200-word passage
III	120	50% of the ideas of a 300-word passage
IV	140	50% of the ideas of a 400-word passage
V	180	50% of the ideas of a 500-word passage
VI	200	50% of the ideas of a 600-word passage
VII	220	50% of the ideas of a 700-word passage
VIII	240	50% of the ideas of a 800-word passage

TABLE

NUMBER OF BOOKS TO BE READ IN EACH DEPARTMENT BY GRADES

DEPARTMENT	GRADES						TOTAL
	III	IV	V	VI	VII	VIII	
Literature and Fiction	4	5	5	6	6	6	32
History and Biography	3	4	5	5	5	5	27
Geography and Travel	3	3	4	5	5	5	25
Nature, Sciences, Invention	4	3	2	2	3	5	19
Art, Music, Civics, Morals	1	1	2	2	3	3	12
Totals	15	16	18	20	22	24	115

[1] Chas. A. Lee, *Courses of Study for Elementary Schools*, p. 568 (Botz Printing and Stationery Co., Jefferson City, Missouri, 1933).

The grade of difficulty of the reading matter is not mentioned but the books and readers sanctioned for use makes this clear. A few of these were mentioned on pages 5–6 of this book.

The best means of arriving at some standard for the performance expected is the use of standardized tests. In what way do these differ from ordinary tests illustrated in this book? A standardized test is standardized in three respects.

1. *In form,* so that thousands of pupils can be given the same test under conditions that will be equally fair to all.

2. *In method of evaluation,* so that the same paper will get the same score no matter which examiner evaluates it.

3. *In that the scores made by thousands of pupils are available,* so that one can quickly compare the score of any one paper with that of thousands of others.

A standardized test presents a standard based on actual experience. One or two examples of standardized reading tests are given in the appendix. Through such tests any pupil's work can quickly be compared with that of other pupils whose score on the same test is known.

It is through standardized tests that large-scale measurements, and hence standards based on experience, have come into being. The standardized test made it possible to compare the work of individuals, classes, schools, and even the school systems of districts and provinces in a way that was not possible before. Lacking standardization a test can only tell how the pupils in one or two small classes compare. It cannot tell what the comparative standard in different schools and geographical centres is.

When a standardized test is not available, testing is like measuring with measuring sticks of different lengths. A standardized test is an attempt to measure with an instrument whose standard of difficulty is well known.

The tremendous differences in both reading ability and in general ability (intelligence) are reflected not only in the difficulty of the literature that can be read by different pupils but in the type of literature pupils can get interested in. In treating cases of weak readers, where there was no serious habit-defect which caused retardation, it has been found that systematic training in *reading tastes* is also necessary. Sometimes a pupil cannot get interested in the kind of literature that the rest of the pupils of his class are reading. A brilliant child will in all probability have jumped ahead, chosen his own books, and proceeded on his own initiative, without need of much guidance, to fairly mature reading-matter. The retarded student is quite different. He has probably ceased reading altogether because the material offered him has no interest for him. He must be treated like a child several years his junior in many of his tastes, even in his ability to understand and master the mechanical difficulties; but he will be very sensitive if this is made known, particularly if he has grown out of many of the juvenile physical and social interests while his intellectual viewpoints have been retarded. It is a case of a juvenile head on a mature body. Real discretion must be used in helping such pupils to choose their literature. Inferior literature is sometimes successfully prescribed in order to get them reading voluntarily at any price. Once they read voluntarily they may master the mechanics so that taste and quality can be improved gradually.

Every pupil comes into the school with his own tastes. Even where there is no question of mental retardation his general-taste may be decidedly trashy. The school influence is only a part of the influence operating on the child. Home influences, companionship in and out of school, the neighbourhood in which he lives, have all contributed to developing these tastes, and it will take very wise guiding

to offset the disadvantage of an environmental influence that, if not actually degrading, is at least superficial or cheapening. Reading furnishes a great means of leading into something better, but does not consist in simply choosing the best books and leaving it at that. Such children are not in a position to see its superiority or even to appreciate it at all. Much may be done by a study of the child's interests and by the gradual introduction of better reading matter, exploiting interests already there. An interest in cheap adventure novels can gradually be converted into interest in soberer tales of the true adventure of explorers and scientists. An interest in tales of shikar can be converted into an interest in nature study.

Cheap, morally questionable, literature is greatly on the increase in India. Frankly sexual stories are to be bought at every railway bookstall and constitute a real problem. We cannot hope to improve taste by building on an unhealthy interest in sex stories. But having improved the general taste it is possible to make evident the obviously bad taste of such books. Nevertheless, pornographic literature will always remain a problem.

There are levels of interest and of taste which are partly due to intelligence, cultural background and personal factors. One must try to find out on what level each individual is and build upwards from that. All people cannot be treated alike when being guided in their reading.

XV

VOCABULARY BUILDING

IN Chapter II on the mechanics of reading much was made of the need for control in the number of new words introduced to inexperienced readers. The term vocabulary-burden was defined as the number of new words introduced in proportion to the total number of words. In this chapter, however, we are not concerned with matters of vocabulary control or of building up a 'reading vocabulary'. The reading vocabulary is the number of words recognized readily at sight, without recourse to careful observance of the individual letters and application of the phonetical rules. In the secondary school the pupils' skill should be such that he can quickly and easily decipher any new word without loss of time or interference with understanding. We are no longer concerned with building up a reading vocabulary (the textbook maker needs to be concerned with it, however) but we are greatly concerned with the building up of 'meaning vocabularies'.

Dictionaries can give only a stiff, formal introduction to a word, not a free working familiarity which brings delight in meeting an old friend of many associations. Formal 'studying' and memorizing the meaning of unfamiliar words in a reading lesson do not give this either. It is the continued use of a word in reading, listening, talking and writing that builds up the meaning associations of that word. But some formalization and systematization is also necessary. The old-fashioned Pestalozzian exercises are still of great value. Let Pestalozzi tell us what his method is:

'I take substantives distinguished by striking characteristics, known through our five senses, out of the dictionary

and put the adjectives that express these characteristics next to them. For example:

eel	slippery, worm-like, leather-skinned
carrion	dead, stinking
evening	quiet, bright, cool, rainy
axle	strong, weak, greasy
field	sandy, loamy, manured, fertile, profitable, unprofitable

Then I invert the process, and find adjectives that describe the striking characteristics of objects, learnt through our senses; then I put the substantive that has the characteristic described by the adjective next to it. For example:

round	ball, hat, moon, sun
light	feather, down, air
heavy	gold, lead, oak-wood
warm	stoves, summer days, flame
high	towers, mountains, trees, giants
deep	seas, lakes, cellars, graves
soft	flesh, wax, butter
elastic	steel springs, whalebone, etc.

I try, however, in no way to lessen the free play of the child's individual thought by the completeness of these illustrations, but only give a few illustrative facts that strike his mind, and ask directly: "What do you know like this?" In most cases, the children find new facts within the sphere of their experience, and very often some that would not occur to the teacher. In this way the circle of their knowledge is made wider and more exact than it could ever be through catechizing, or at least only by a hundredfold more skill and trouble.'[1]

The point in these exercises is to associate as much

[1] J. H. Pestalozzi (Trans. L. E. Holland & F. C. Turner) *How Gertrude Teaches Her Children*, pp. 100–1 (George Allen & Unwin Ltd.)

meaning as possible with words through use and see that the words are actually used. Most words have a variety of meanings used in different circumstances and the reader must know the different meanings in order not to choose a wholly inappropriate meaning during reading. Understanding in reading is dependent on a rich meaning-vocabulary. It is not only the number of words the reader has some acquaintance with, but the extent, depth, vividness, comprehensiveness, which the meanings have for him.

We know some words very well. Others we have no difficulty with when we meet them in context, but out of context we would be hard put to it to explain what they mean. We read them without difficulty but without knowing them well enough to use them in our own compositions and conversation. The meanings of others we can guess at, while a good many others make us ill at ease when they appear. There are many degrees of 'knowing a word'.

There is a very high correlation between reading ability and extent of vocabulary. This is to be expected, as an extensive vocabulary is built up largely through reading. The size of a person's vocabulary is often a fairly good index to the amount and kind of reading he does, but not always as some people have a much better memory for words than others. Most intelligence tests for older children and adults include vocabulary exercises. One of Binet's best-known items for testing intelligence is to ask the pupil to repeat all the words he can in two minutes. Not only is the number of words repeated in this exercise of significance but also the selection of words. Some children quickly reveal that one word suggests another in more or less logically associated sequence which again reveals what they think about. In reading, the mind is even more important than the eye and what the mind does in reading is largely dependent on the associations each word brings up as we read.

Reading builds up the vocabulary. Conversely vocabulary enrichment builds up the structural framework for understanding while reading. Therefore it is wise to work at the improvement of reading habits by enriching the vocabulary as well as through direct reading. A similar claim might be made for all language work but vocabulary drills lend themselves to the purpose especially well.

In many reading tests a whole series of items is devoted to the measurement of abilities associated with vocabulary enrichment. This is quite appropriate. Since vocabulary (in German it is called *Wortschatz* or 'word treasury') is a *knowledge* rather than a *skill* like reading or computation, it is somewhat harder to measure it. In the skills we can quickly see if a person can *do* a certain thing or not. In measuring the extent of vocabulary we can only pick out a few simple words and judge on the basis of this. We do not expect a person to be able to do multiplication if he cannot do addition, but a person may know the meaning of a word like 'sympathy', requiring maturity to understand it, even if he does not know the word 'elephant' which any child having once seen a good picture of an elephant is sure to know. Since a mature, educated person should know 20,000 words we can only examine him in a small proportion of them. A wisely chosen sampling of words reveals a great deal. For a comprehensive vocabulary test 100 items should be included.

The following is a short sample of the most common kind of a vocabulary test.

1. *tamarind* is a	tree, animal, vegetable, human race, spice
2. *gigantic* means	sensitive, strong, boundless, fierce, large
3. to *repel* means to	repulse, appeal, attract, retract, stupefy

4. *atmosphere* means — wind, like a sphere, altitude, stormy, air
5. *passive* means — passionate, pacifist, passing, inactive, receptive
6. to *stimulate* means to — enervate, give incentive to, mutilate, assist, organize
7. *thoroughfare* means — thoroughness, farinaceous, roadway, railway, satisfactory
8. *obligated* means — obliterated, obliging, sincere, ambitious, indebted to
9. *financial* means — final, infinite, pertaining to money matters, pertaining to government, exhausting
10. to *corroborate* means to — correlate, verify, stipulate, steal, specify

There are other forms in which such a test may be made, although the Multiple-choice Test is the most usual. Some tests give a short sentence to limit the meaning through context such as:

It is *astonishing*.

Astonishing means bad, thorough, furious, amazing, stormy.

They met for a *conference*.

Conference means interview, musical performance, crowd, contest, party.

The Classification Test can also be used, as for example:

Strike out the word in each word series that does not belong to the group.

Mammal, reptile, amphibian, *fern*, fish

Wise, *handsome*, able, sagacious, intelligent

Needle, screw, nail, bolt, dowel pin

This is not strictly a vocabulary test but deals with the knowledge of the proper uses, settings or relationships of the things, actions or ideas for which words are symbols.

Here are three other types of vocabulary tests.

A Matching Test

Directions. In the first column are a number of words to be defined and in the second column are a number of definitions. Draw a pencil line between each word and a definition which may be used for that word. Remember that most words have several definitions but only one definition is given below.

Words	*Definitions*
municipal	something done in vain
bondage	to enlarge
hexagonal	to hold within limits
language	against
to amass	to separate solids from liquid
weevil	belonging to city administration
venomous	condition of slavery
to filter	to confuse
to bewilder	to accumulate
versus	an insect
a straight line	six-sided
futile	a means of communication between people
to magnify	shortest distance between two points
to restrict	containing poison
canned	put in tin containers

Analogies Test

Underline the correct choice:

1. monsoon: season:: September: (day, divali, October, month)
2. man: hand:: tree: (limb, flower, leaf, bark)

3. egg: bird:: seed: (myna, bark, plant, birth)
4. export: import:: external: (trade, commerce, outside, internal)
5. book: writer:: table: (page, wood, carpenter, saw)
6. Outline: composition:: skeleton: (bones, body, skull, writing)
7. beautiful: ugly:: similar: (opposite, pretty, hideous, alike)
8. heavy: weight:: depth: (stone, width, dimension, space)
9. cucumber: vegetable:: iron: (metal, hard, fruit, copper)
10. India: peninsula:: Suez: (canal, isthmus, continent, trade, route)

'OPPOSITE' TEST

Underline the opposite of the first word in each line:

Happy	(rich, unfortunate, sad, sick, lucky)
fortunate	(accident, lame, unhappy, unfortunate, unwise)
enviable	(not to be envied, wealthy, poor, jealous, not jealous)
maximum	(large, optimist, minimum, exaggerated, diminutive)
tenacious	(untenable, fragile, soft, tough, loose)
fatigue	(tiresome, indefatigable, endurance, thin, tough)
autonomous	(self-reliant, subject, autocratic, unauthorized, powerless)
vivacious	(anti-vivisection, viperine, vitamin, unconscious, lifeless)
punctual	(slow, careless, timeless, tardy, punctuate)
mature	(unripe, immaterial, small, minor, matriculate)

The teacher is probably more interested in vocabulary-building exercises than in tests of vocabulary. The Pestalozzian method has already been mentioned. This permits of infinite expansion. Not only should adjectives to go with nouns, nouns to go with adjectives, subjects to go with predicates, and so on, be studied but such word relationships as

Similarities and Opposites
Lists of Rhyming Words, such as tail, sail, rail
Alphabetical Arrangements of Words
Classification of Words according to Logical Relationships
Lists of Synonyms, Antonyms and Homonyms

A study of prefixes, suffixes, etc., is most necessary. Every language has its own system of word construction and the examples given below are only meant to be illustrative of the fact that as word analysis exercises can be helpful in English so they can be helpful in other languages also, but that the rules and examples have to be worked out independently for each language.

One reason for teaching Latin is that it gives insight into the word construction of so many English words. Thorndike found that the improvement in English derived from four years' study of Latin is also obtainable from three months' attention to the construction and roots of words. Sanskrit is taught largely though by no means exclusively, for the help it gives in understanding the present-day Indian languages of Sanskritic origin. Much of this benefit can be obtained by a careful study of the roots, prefixes, etc., of commonly used words in present-day languages. Study of the classical language does not guarantee skill in analysing words of one's own language unless the relationships between the modern and classical languages are pointed out. Whether the classical language has been

taught or not, much help can be derived from a study of word constructions and origins. This systematizes meanings of words for us. It helps us classify and identify them, and helps us to distinguish the various shapes of meanings. A few examples of helpful exercises are given.

Building Longer Words[1]

unhappy	runner	healthy
untie	traveller	dirty
unkind	hunter	dusty
unload	helper	funny

1. Do you know all the words above?
2. Each of the words above was built by adding a helper to a shorter word. The helpers are *un-*, *-er*, and *-y*. Find a word with *-er*.
3. Which word means one who travels?
4. Which word means one who runs?
5. What helper is at the end of hunter, traveller, and runner?
6. Which word means the opposite of kind?
7. Which word means the opposite of tie?
8. What helper is at the beginning of unkind and untie?
9. Which word means having good health?
10. Which word means full of fun?
11. What helper is at the end of healthy and funny?
12. Build longer words by adding *un-*, *-er*, or *-y* to *load*, *help*, *dirt*, *stick*, and *happy*.

Word-Building Helpers[2]

Beginning helpers or prefixes.		End helpers or suffixes	
re	*dis*	*less*	*y*
rehearse	disobey	worthless	papery
replace	disagreeable	restless	rusty
re-read	discontinue	leafless	spooky

[1] Stone, op. cit., pp. 181–2.

[2] Stone, op. cit., p. 183.

The prefix *re* means *again* or *back*.

The prefix *dis* means *not* and makes the word mean the *opposite* of what it means without the prefix.

The suffix *less* means *without*.

The suffix *y* means *like*.

Answer each of these questions in a full sentence that includes the word that is the meaning of the prefix or suffix. For example, '*Papery* bark is bark that is *like* paper.'

1. What does it mean to *replace* a book?
2. What does it mean to *re-read* a story?
3. What kind of knife is a *worthless* knife?
4. What kind of tree is a *leafless* tree?
5. What does a girl do when she *discontinues* drinking milk?

Anything that aids in accurate recognition of the meaning of a word aids in the process of understanding in reading. At best we understand only in part what the writer is trying to tell us. If our knowledge of words is weak there is little actual contact between reader and writer. But 90 per cent of vocabulary work should be done outside the reading period. It may be done during part of the time allotted to reading but not mixed in with the reading except occasionally to emphasize the meaning of some word. During the reading period nothing should be allowed to interfere with the continuity of thought of the reading matter.

XVI
READING FAULTS

A VISUAL defect, wrong habits acquired in the early days of learning to read, a misconception of a wrong attitude can, as has been said before, handicap a child so that he will be a poor reader. Since reading is so very important this shortcoming may ruin the educational career of a normally bright or even brilliant child. It has been found that most defects are remedial in cases where children are not decidedly mentally backward.

In India education above the primary level is strictly competitive. Only a small part of the population can receive it under present conditions. Therefore a weak pupil is not tolerated long in class. He is soon eliminated. In countries where the school-going age continues longer the failures remain in the school instead of being eliminated. They constitute a problem. India has not the same need for remedial work, but remedial defects are a challenge to any teacher worth his salt and to a school system that feels its responsibility.

In many schools in America there are clinics for the treatment of weak readers. Much of the best work in the psychology of reading has come out of these clinics. Very careful case-work has been done and recorded. A copious literature awaits the studious teacher who really wants to go into the matter.

Without good measuring devices the weak reader is not easily [illegible] If his troubles begin with word-recognition the ordinary [illegible] If the weak[illegible] lesson is likely to reveal that he is weak. [illegible] his weakness is quite likely [illegible] the more advanced steps [illegible] an Indian school.

There will be few schools in India, or in any country for that matter, where remedial work is not needed. An oral word-recognition test like that on pages 75–7 will probably reveal no less than 25 per cent of the middle school pupils as being in urgent need of attention. The various silent reading tests suggested will give further information about disability.

When it has been discovered that a pupil is weak, the really important task in testing remains. One must find out what the trouble is. Locating the trouble often suggests its own remedy, but for some of the faults the teacher will have to know his psychology of reading well to devise proper remedial exercises.

Many of the most stubborn and tricky defects are visual. These affect the more elementary skill, word-recognition. In order to correct these one must have quite specific information as to what the defect is. The most common visual defects are confusion of vowels, confusion of consonants, reversals of letters, and omission or addition of sounds in the word.

Brueckner, one of the authorities in the field of remedial teaching, has a record card for listing defects which gives an excellent idea of the kind of faults to look for. This summary sheet is perhaps over-elaborate for use in India but is extremely rich in suggestion. The contents of the entire card are not printed, only the part for silent reading.

GENERAL DIFFICULTIES IN READING[1]

1. Eye-movements

Rhythmical.............. Smooth..............
Regressive.............. Periods of ...ion ....
Rapid.................... ....

[1]Leo J. Brueck... ...elby, *Diagnostic and Remedial Teaching*...

Narrow span............ Wide span ....

Return sweep: Good......... Poor..............................

2. Extraneous movements

Pointing with finger......... Pencil.............................

Turning of head............... Wiggling.........................

Fingering hair................. Fingers...........................

3. Vocalization

Lip Movements: None...... Slight...... Active......
Whispering......

4. Motor deficiencies: Lisping...... Stuttering.........
Stammering......

5. Language disturbances....................

6. Visual: Dyslexia............ Defective vision.........

7. Memory span: Short...... Long...... Visual......
Auditory......

8. Guessings: At words............... At responses......

9. Mechanics: Word-poor reader...... Word-by-word reader...... Purposeless reader...... Slow-laborious reader...... Dull-monotonous reader...... Over-careful...... Disregard for punctuation...... Difficulty in phrasing......

10. Breathing: Difficult...... Agrees with pauses......

Difficulties in Silent Narrative Reading

1. Rate per minute
2. Difficulty in getting meaning
   a. From whole paragraphs
   b. From whole sentences
   c. By skimming
   d. By getting answers to specific questions
   e. By getting answers to thought questions
   f. By getting answers to puzzle type of questions
3. Difficulty in comparing
   a. Words of same meaning

b. Statements of same meaning

4. Difficulty
   a. To get particular idea
   b. To take directions
   c. To answer
      (i) what pupil reads silently
      (ii) what examiner reads orally
   d. To find and verify answers
   e. To produce what has been read
5. Difficulty in keeping one's place
6. Difficulty in judging the correctness of statements

One must also constantly be on one's guard against physical defects. In cases of poor word-recognition it would be a good idea to try the eye test with the eye charts (see Appendix I). In some cases the eye doctor should certainly be consulted. A teacher can detect the grossest eye defects with these charts but satisfactory performance on these charts cannot be considered a guarantee that the trouble is not visual.

The subject of remedial work is too elaborate and technical for the inclusion of details in this book and I cannot write from experience apart from rather ordinary classroom practice. A teacher will find much to study and think about in the condensed chart herein given. Even if the teacher does not get an opportunity to do clinical work, he will find that this chart gives endless suggestions whenever the improvement of reading habits is thought of. It can be referred to daily with profit. It is more or less a summary of most of this book.

A CHART FOR GUIDANCE IN IMPROVING READING DEFICIENCIES[1]

For the convenience of teachers, the possible causes of

[1] Chas. A. Lee, *Courses of Study for Elementary Schools*, pp. 451–57, State of Missouri. (The charts have been somewhat abridged.)

some of the common reading deficiencies and some remedial measures for improving or overcoming those deficiencies have been put in tabular form. The items were gathered from published and unpublished cases, records and diagnostic studies. When a certain reading deficiency of a child has been discovered, look in the first column headed 'Deficiency' and find the one in question. Then read across the page and find the possible causes of the deficiency in the second column and suggested remedies for them in the third column. Then formulate exercises to carry out the remedial measures.

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM

Deficiencies	Possible causes	Remedial measures
Poor word-recognition	Poor vision — Low mentality — Scarcity of reading material —Too little phonics —Material too difficult—Defective teaching—Lack of knowledge of English	Much easy attractive reading material—Drill on common sight words, e.g. when, because, among —Emphasize groups of words — Much word and phrase drill
Narrow span of recognition	Poor vision—Low mentality—Too much phonics — Material too difficult—Defective beginning methods — Too much oral reading—Vocalization — Not enough eye-span work—Meagre meaning-vocabulary	Much eye-span work —Give no further attention to phonics—But very little oral reading — Correct physical defects—Break up habits of vocalization — Increase the meaning-vocabulary
Improper eye-movements	Poor vision—Nervousness—Meagre vocabulary—Insufficient eye-span work—Poor beginning methods—Poor co-ordination of the eye—Excessive articulation—Pointing to words	Correct physical defects —Eye-span work—Develop large sight-vocabulary — Break habit of pointing to words and of vocalization

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM (CONT.)

Deficiencies	Possible causes	Remedial measures
Mispronunciation	Impediment in speech—Eye defect—Defective beginning methods—Too little phonics—Carelessness—Over-dependence on context cues—Material too difficult	Word analysis—Phonic drills—Apply phonics in unlocking new words—Supply material which requires accurate recognition—Build up a large vocabulary
Small meaning-vocabulary	Small speaking vocabulary—Lack of experience	A systematic study in relation to meaning—Study prefixes, suffixes, root words, synonyms, antonyms—Study meaning through context—Use the dictionary—Match words with pictures—Much reading material suitable to ability—Use devices suggested for overcoming meagre vocabulary
Reading word by word	Short eye-span—Unable to get words through context—Material too difficult—Insufficient phrase drill—Too much phonics—Too much oral reading—Defective beginning methods—Poor vision	Much eye-span work—Less oral reading—Much easy attractive reading material read under time pressure—Less oral reading
Inability to attack new and unfamiliar words	Wrong beginning methods—Lack of training in phonetics and word analysis—Insufficient training in getting words through context	Instead of pronouncing words for child, show him how to work them out through context, phonics, word analysis and through the use of the dictionary—Give much drill in the use of each of the above

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM (CONT.)

Deficiencies	Possible causes	Remedial measures
		devices that pupils are deficient in—Have pupil keep a list of all words asked for—Use these for drill
Depends upon others to pronounce words for him	Teachers and parents have pronounced words for him too often—Hasn't sufficient training	Lead him to see his dependence on others—Create in him a desire to pronounce words independently—Give training for independent recognition of words
Pointing with the finger	Poor beginning methods — Material too difficult—Uses as a crutch to aid in holding place—Poor vision—Nervousness	Get pupil to see that it retards his speed—Set standard before reading that finger pointing won't be used—Read under time pressure—Easy, attractive reading material
Vocalization and lip movement during silent reading	Habit developed from first grade—Too much oral reading—Too much phonics—Poor vision	Phrase flashing—Speed drills — Lead pupils to see the disadvantage of it—Set standard before starting to read, of refraining from lip movement—Place finger over lips
Failure to note carefully small words or key words	Poor vision—Carelessness, reads too fast	Give material that requires exact close reading—Set a premium on accurate reading—Keep a record from day to day of errors of this type made and let pupil see his progress in overcoming his deficiency—Follow exacting written or

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM (CONT.)

Deficiencies	Possible causes	Remedial measures
		printed directions—Attach meaning to words by teaching in phrases or sentences—Give drill on pronunciation using the key words as aids
Inaccuracy due to carelessness	Poor vision—Nervousness—Low mentality—Haste in reading—Defective beginning methods—Material too difficult	Correct physical defects—Check closely on material read and keep a record from day to day of all errors made—Give written or printed directions requiring exact reading—Accept nothing but accurate interpretation
Failure to differentiate words somewhat different in spelling	Poor vision—Carelessness — Inaccurate perception—Short span of recognition—Lack of attention to meaning—Low mentality	Correct physical defects—(See remedies for inaccuracy due to carelessness) — Drill exercises on phrase and short sentences—Phonic drills—Place emphasis on interpretation of what was read—Drill exercises on words that are similar, e.g. saw, was. First drill in 'saw', then 'was', then 'saw' and 'was' presented in succession—Drill in phrases and sentences and finally as isolated words
Substitutions or insertions that change meaning of content	Limited vocabulary—Lack of thoughtful attitude while reading	Use suggestions for overcoming a meagre vocabulary—Adjust the material to pupil's vocabulary—

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM (CONT.)

Deficiencies	Possible causes	Remedial measures
		Give material that demands accurate interpretation—Give printed and written directions to carry out
Inability to break sentences up into proper phrases	Defective beginning methods—Speech defects—Inability to recognize thought units—Short eye-span—In oral reading short eye-voice-span—Unable to profit by punctuation marks	Overcome speech defects as far as possible—Flash phrase—Card work — Practice phrasing — Group words in sentences according to thought relationship —Increase eye-span —Give much attention to punctuation marks
Interested in hearing stories but not in reading	Material too difficult —Satisfied by parents or others reading to him	Give attractive reading material suitable for his ability—Motivate the reading for him—Assign work he likes to do and requires reading to do it—Have contests to see who can read the most stories or books in a given length of time—Use charts to show number of pages read
Unable to reproduce what was read	Slow reader—Lack of interest — Material too difficult — Too much attention to mechanics of reading	Eye-span work involving reproduction—Interesting reading material suited to the ability of the pupils — Overcome any deficiency in mechanics of reading
Unable to form judgements on material read	Lack of training in it —Assignments do not require it—Lack of comprehension of	Give specific training to lead the pupils to form their own judgement—Every assign-

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM (CONT.)

Deficiencies	Possible causes	Remedial measures
	what was read—No incentive for that type of work—Too much drill on getting mere facts—Low mentality	ment should contain one or more judgement questions—See that the oral questions involve problems which will challenge the ability to think
Unable to answer fact questions based on material read	Failure to direct attention to meaning—Reading without a purpose—Material too difficult—Background inadequate for understanding what was read—Poor assignments	Use material that is within pupil's ability to understand—Give questions for pupil to find answers—Have him read a paragraph and answer fact questions on it—Gradually increase the amount read before asking questions until whole selection can be read—Make good assignments which will prevent this deficiency — Let pupil know that questions about the selection read will be asked—Solve riddles that are read
Unable to make an outline or organize material read	Assignments do not call for it—Material too difficult — Lack of comprehension	Give definite training in this type of work—Make assignments requiring some form of organization—Begin with simplest form and gradually lead up to more difficult form—Use interesting material suited to the ability of the child
Unable to follow written or printed	Lack of comprehension—Vocabulary	Give training in following written or print-

INDIVIDUAL DIFFICULTIES WITH THEIR CAUSES AND WITH REMEDIAL MEASURES FOR OVERCOMING THEM (CONT.)

Deficiencies	Possible causes	Remedial measures
directions	too difficult for him—Lack of training with that type of exercise—Doesn't read in terms of what is to be done	ed directions, using various types—Insist upon the pupil's relying upon his own responsibility for carrying out the directions—Make directions simple at first and gradually increase in difficulty—Use care in suiting vocabulary to the individual
Unable to find the central idea of what was read	Lack of training—Lack of comprehension—Poor assignments	Use material suited to the ability of the pupils—Give drill work in comprehension if need be—Demand some form of 'finding the central idea' in assignments—Start with a short unit (sentence or paragraph) for finding the central idea and gradually increase the length. (See suggestions for organizations.)

APPENDIX I

EXAMINING EYES

It goes without saying that a pupil should have sufficiently good eyes to read without undue strain. In India facilities for having the eyes of pupils properly tested are usually lacking altogether or are difficult to arrange.

About a year ago Dr V. Rambo of Mungeli, an eye specialist, showed the writer some eye-charts with the remark that a set of these should be in every school. This was surprising to the writer as he had thought that eye-testing should be done only by the expert. I am not a medical man but I took the charts and tried them out myself. I have seen several primary-school teachers use them intelligently. All that these charts do is to help discover any boy or girl whose eyesight is defective or weak. The only remedy suggested is that 'if the eyes are weak, go and see the doctor'.

All the children in about fifteen primary schools were tested (1,210 pupils in all). First the teachers were asked whether there were any pupils with weak eyes in the class. In only one-third of the classes where pupils' eyes were really bad had the teacher known that the pupils were thus handicapped. Defective eyes were found in 3 to 13 per cent of the pupils. Weak eyes were found in 25 per cent of the cases.

Those listed as defective can with great difficulty read what the teacher writes on the blackboard at ten feet distance.

They are very apt to fail in Class I and be treated as stupid children. They are not recognized as needing attention to their eyes. Many a bright pupil has probably

been branded a *murkh, gadha,* or *bewaquf* who needed nothing more than glasses. Many a time the rod has been applied where attention to the eyes was what was really needed.

After this, pupils in two middle schools were examined. In one the headmistress and principal agreed that they knew each individual pupil and were sure that not one of them was suffering from weak eyes. The examination listed 24 as needing medical examination. These 24 children were taken to the civil surgeon without his being told how these children had been selected for his attention. Out of 24, 22 were retained for treatment or prescription of glasses, a striking indication that an intelligent teacher who will take the trouble can find out if further examination is advisable. Several children were considerably helped by being seated so they could see the blackboard better which would never have happened without this examination.

Only a reliable oculist or physician should be consulted for treatment. There are all sorts of quacks who sell glasses without properly testing the eyes. Any intelligent person can use the eye-charts well enough to find out if a person has weak eyes but it takes an expert to test eyes for the prescription of glasses. Glasses are often sold without any testing whatever except that the buyer tries on a number of glasses to see with which he *thinks* he can see best. Such glasses may do very serious damage to the eyes. The probability is that they will be far worse for the eyes than no glasses at all.

It goes without saying that one cannot use glasses that were prescribed for someone else without danger of injury. It is very rare that two people can be helped by the same pair of glasses.

Our eyes change very rapidly. People wearing glasses should have their eyes re-examined every year. The stronger

the glasses the more necessary it is to have an examination yearly.

The charts cost 8 annas a set (from Mission Press, Jubbulpore). Each school can easily afford a set and teachers should get used to examining their children at the beginning of each year.

There are three charts. One in Hindi letters is for literate Hindi readers. The E Chart can be used by non-literates without trouble, hence is usable in any language area. Even children three years of age can be examined with this. There is also one chart in English.

APPENDIX II

'THE CROW AND PYTHON' READING TEST

THIS test is modelled after one by Ballard. The story in this test is original. It is a rather radical kind of standardized test which has not found very wide acceptance although Ballard who is a very eminent authority on new-type testing, esteems it highly. The emphasis is much more strongly on memory than in the more usual types of reading tests. There are some phases of the reading skill, however, which it probably measures better than other types.

The test is intended for use in high schools although it is also usable in the highest classes of the middle school and in Intermediate and Training Colleges. It was originally prepared in Hindi. The norms given below are for the Hindi version and are not applicable to any other language. Transposition into another language will probably make some difference in norms.

Directions. After the pupils have been seated pass out the folder so that page 1 shows. Impress upon them that they are not to open the folder before instructions to that effect are given.

Then say to the pupils: 'Now open your folder. Read this story very carefully. Read quickly, for you will be given only 6 minutes to read it but read carefully for you will be given a test to see what you have remembered.'

Allow exactly 6 minutes and say: 'Fold your papers the way they were when you received them.' Arrange to have them collected as quickly as possible.

Some of the pupils may not have finished. Tell them there is still a good chance to make a good mark even if they didn't finish.

After the papers are collected, give out the examination

sheet. Have the pupils write their names, class, and school, on the top of page 1. Then say to the pupils: 'In this folder is the story you read before of "The Crow and the Python". Many words have been left out which you are expected to fill in. Fill in all the blank spaces you can. You will not be able to fill in all, but fill in all you can.'

The time limit to the written examination is 30 minutes. Collect papers as soon as the pupils have done all they can do.

In grading the papers full credit should be given for close synonyms of the words used in the original story. For the sake of uniformity in grading the synonyms allowable should be listed in the directions for scoring. Each word correctly filled in counts one point.

The norms for the Hindi version of this test (to be revised later) are:

Class	VII	VIII	IX	X	XI
Score	12	16	20	23	28

The Crow and the Python

A crow was travelling about in the jungle one day and sat on a *tree* to rest. He chanced to see a python coiled up in the *hollow* of a tree stump. The crow did not like *snakes*, least of all pythons. The crow had not found anything to *eat* and was therefore very *cross* and ready to find fault with anything and anybody.

'What makes you so sneaky?' he impertinently asked the python.

'What makes you think I am *sneaky*?' asked the python.

'You travel on your belly, you hide in the bushes, you seldom come out in the day but crawl around at night when all decent folk are *asleep*,' said the crow.

'Of course, I crawl on my belly,' said the python. 'You also would be reduced to that extremity if the Creator had not provided you with *feet* and *wings*. But have you ever thought of it that hardly a tenth of the fauna of the world is as *fortunate* as you are in this respect? We have to make the best of our physical *limitations* and do the best we can.

'And why do you all call me sneaky just because I am more *active* at night? Most of us animals in the jungle are *nocturnal* including the innocent deer, the lordly lion, and the wise old elephant. Only you *winged* creatures prefer the day in the jungle because your powers of flight take you high and safe out of all *danger*.

'And why should I not hide in the bushes? The *speed* of my method of locomotion is but a modest mile an hour. Some of my smaller cousins can exceed my *speed* limit with the same method of locomotion but they are of a lighter build. I am not so *stream-lined*. How could I ever catch my prey chasing in the open? I must wait until some *unsuspecting* potential prey can be taken unawares. And besides, open spaces are not healthy for any of us snakes. We have many *enemies* and our mode of defence as well as mode of *flight* would place us in many dire predicaments. You crows too are not above taking us at a disadvantage. Furthermore have you ever thought of how small the field of *vision* of a belly-crawling animal is? We can easily be taken by *surprise*.'

The crow thought the *excuses* lame but he could not refute them. Besides, a hungry or cross person does not reason, but only argues. So he launched a new attack. 'But you *charm* animals and draw them into your mouth by staring at them with your *evil* eye, and you steal milk from the cow's udder. *Everybody* says it is true,' said the crow.

'Don't get excited,' said the python. 'Let us take your first *accusation* first. Its factual basis is very *weak*, I must say. You greatly *overestimate* my occult powers. And I do not stare. Nature has not endowed me with *eyelids* and therefore my *unblinking* eyes erroneously give the appearance of staring. I have never *charmed* any animal. I patiently wait until they inadvertently blunder into my striking distance. Sometimes, and now let me warn you that you are not caught *unawares*, some animals, among which crows are not conspicuous by their absence, are so impelled by *curiosity* that they approach closer to me than is healthy for them. Since I must *eat* and my chances for a good meal are not too *abundant*, I act as nature ordained me to act under a *food* stimulus.

'And now your second accusation, which is wholly

fallacious. I am not a *mammal* and have never indulged in a *mammal's* fare. It is utterly impossible for me to induce *lactation* in a cow. I can swallow an object many times the size of my *head* because of the great expansive powers of my *jaws* but the *direction* of the swallowing is always forwards and never *retrogressive*. A *one-way* motion of this sort does not stimulate *lactation* in the udders. Once I commence swallowing I cannot *relinquish* the object of my seizure. My *dentition* also is shaped for retentive functions only which makes it impossible for me to *disgorge*. Let me go into the description of my *anatomical* structure a little further.'

But the python never finished his increasingly learned *lecture* for the hungry crow saw something that *interested* him. A little wormlike object (which was, of course, the *tongue* of the snake) was darting in and out of the reptile's *mouth*. As you know, snakes can never keep their tongues still while they are *thinking*. The crow's curiosity was aroused. What could this wormlike thing be? Perhaps it might be good to eat. So he jumped close by to watch it better. Thereupon the python went into action and soon the helpless crow was being *constricted* in the coils of the serpent. After the meal the python mused 'A most *profitable* conversation'.

To save repeating the whole story, the words that the children have to fill in have been printed in italics.

APPENDIX III

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